

DIGITAL SERVITUDE

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JULIE DAHLSTROM*

Abstract: This Article addresses the phenomenon of digital servitude—forced labor practices facilitated by information and communications technology (ICT). With advances in technology and the internet, scholars and advocates have observed the rise of technology-facilitated human trafficking. Yet, disproportionate focus has remained on online sex trafficking, including commercial sex websites and online recruitment, despite ample research on work, technology, and digital surveillance. This Article seeks to fill this gap by shedding light on how technology intersects with involuntary servitude and forced labor claims in the United States. By analyzing federal pleadings in civil and criminal labor trafficking cases, it provides new insights about how technology can facilitate forced labor and how trafficking law can evolve to take into account the modern realities of servitude.

In particular, this Article posits that federal labor trafficking statutes, with modest interventions, can play an important role in addressing technology-facilitated labor trafficking in the United States. Since the enactment of the Thirteenth Amendment, U.S. federal courts have interpreted labor trafficking to include a wider range of coercive conduct. Congress also has imbued federal remedies with key features, like extraterritorial jurisdiction and third-party liability, that permit a potentially expansive reach. Additionally, trafficking claims, unlike other employment and contract remedies, do not require an employee-employer relationship and, thus, can apply to a broad range of workers, including independent contractors and temporary workers. For these reasons, this Article argues that federal human trafficking statutes can provide an important legal remedy and a powerful expressive tool to combat technology-facilitated forced labor.

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INTRODUCTION

The term involuntary servitude often gives rise to images of workers toiling in the fields or sweatshops—not technology professionals, content creators, or those targeted with technology-facilitated abuse.[1] Yet, in the United States, these are some of the faces of modern servitude.[2] With the rise of the digital economy, it is not surprising that technology plays a more visible role in forced labor.[3] Technology increasingly shapes how individuals find work, experience

[1] This Article uses "involuntary servitude" as an umbrella term to include involuntary servitude and forced labor violations under U.S. federal law, which includes both violent and nonviolent forms of coerced work. *See* 18 U.S.C. §§ 1584, 1589. Some have used the term "cyber slavery" to refer to human trafficking practices connected to technology, but this Article uses the term "digital servitude" to refer to the ways in which technology intersects with and/or reinforces forced labor. *See, e.g.*, CTR. FOR SOC. JUST., A MODERN RESPONSE TO MODERN SLAVERY 10–12 (2015), https://www.europol.europa.eu/cms/sites/default/files/documents/csjj3202_slavery_report_04.15_web.pdf [https://perma.cc/LY67-Y7CE] (referring to the expansion of organized crime groups engaging in trafficking online as "cyber slavery"); Esther Annorzie, *A New Form of Slavery: Cyber Slavery in Southeast Asia*, HUM. RTS. RSCH. CTR. (Feb. 14, 2025), https://www.humanrightsresearch.org/post/a-new-form-of-slavery-cyber-slavery-in-southeast-asia [https://perma.cc/4S2M-Y6U8] (describing the rise of "cyber slavery" in Southeast Asia as involving forced online scamming operations). Some scholars and activists have used the term "digital servitude" to refer to a separate phenomenon—the exploitation of private data for the benefit of technology corporations—but these practices are beyond the scope of this Article. *See, e.g.*, Daniel Castro, *Where Ethics Meets Data Protection: An Open Letter to EDPS and CPDP*, INFO. TECH. & INNOVATION FOUND. (Feb. 11, 2019), https://itif.org/publications/2019/02/11/where-ethics-meets-data-protection-open-letter-edps-and-cpdp/ [https://perma.cc/ABD6-FUZF] (quoting Giovanni Buttarelli, "[w]e now face the challenge of abolishing digital servitude—where people are mined for their data, and served back information selected by the algorithm").

[2] Digital servitude is not the only form of forced labor. *See, e.g.*, U.S. DEP'T OF STATE, 2024 TRAFFICKING IN PERSONS REPORT: UNITED STATES (2025), https://www.state.gov/reports/2024-trafficking-in-persons-report/united-states/ [https://perma.cc/6HWE-RN3E] (describing forced labor occurring in diverse industries, including the hospitality industry, traveling sales crews, agriculture, construction, and landscaping, among others). Although labor trafficking occurs in a variety of industries, this Article focuses on how technology manifests in federal forced labor cases.

[3] The term "digital economy" refers to the way in which digital technologies, including digital communication networks, computers, software, and the internet, drive the economy. *See* DON TAPSCOTT, THE DIGITAL ECONOMY: RETHINKING PROMISE AND PERIL IN THE AGE OF NETWORKED INTELLIGENCE, xxiii (2d ed. 1995) (positing that "[a] new medium of human communications is emerging" that will make possible "a new economy based on the networking of human intelligence"); Thomas Mesenbourg, Measuring the Digital Economy 2–3 (2000) (working paper) (on file with the U.S. Bureau of the Census), https://www.census.gov/content/dam/Census/library/working-papers/2001/econ/umdigital.pdf [https://perma.cc/B7QV-C7H3] (describing efforts to define and measure the digital economy); KATARZYNA SLEDZIEWSKA & RENATA WLOCH, THE ECONOMICS OF DIGITAL TRANSFORMATION: THE DISRUPTION OF MARKETS, PRODUCTION, CONSUMPTION, AND WORK 1–4 (2021) (explaining the evolution of the "digital economy" as distinct from the "information economy" that previously dominated the literature since the 1960s). The "digital economy" includes the myriad ways that data, the internet, and technology impact models for business, production, and transactions. LORRAINE CHARLES, SHUTING XIA & ADAM P. COUTTS, INT'L LAB. ORG., DIGITALIZATION AND EMPLOYMENT: A REVIEW 9 (2022) https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_emp/documents/publication/wcms_854353.pdf [https://perma.cc/W836-CDDQ].

the workplace, and perform their jobs.[4] Indeed, technology is frequently the starting point for job recruitment, as workers use online websites and social media to find employment.[5] Messages about jobs flood the internet, making it difficult to discern between legitimate and exploitative jobs.[6] Technology also provides new avenues to surveil, control, and coerce workers.[7] Employers can now easily transform technologies—like iPhones, cloud-based virtual assistant technology like Amazon's Alexa, and GPS trackers—into tools of surveillance and control.[8] They can also use cyber harassment, like doxing or non-consensual pornography,[9] to control workers.[10] Moreover, employers can withhold access to technology, like phones, WIFI, or SIM Cards, to socially

[4] *See, e.g.*, Jeffrey M. Hirsch, *Future Work*, 2020 U. ILL. L. REV. 889, 892 (examining "technology's far-reaching impact on the workplace"); Annette Bernhardt, Lisa Kresge & Reem Suleiman, *Data and Algorithms at Work: The Case for Worker Technology Rights*, U.C. BERKELEY LAB. CTR. 1 (2021), https://laborcenter.berkeley.edu/wp-content/uploads/2021/11/Data-and-Algorithms-at-Work.pdf [https://perma.cc/WM6B-PX6V] (examining how "employers are increasingly using data and algorithms in ways that stand to have profound consequences for wages, working conditions, race and gender equity, and worker power"); Robyn Zoccola & Erin Borissov, *Digital Divide—Disparate Impact? The Impact of Modern Recruiting and Workplace Practices That Rely on Broadband*, 56 IND. L. REV. 543, 548 (2023) (observing how employers frequently recruit prospective job applicants online).

[5] *See infra* Part II.A.

[6] U.S. DEP'T OF STATE, OFF. TO MONITOR & COMBAT TRAFFICKING IN PERSONS, ONLINE RECRUITMENT OF VULNERABLE POPULATIONS FOR FORCED LABOR 1 (June 2023), https://www.state.gov/wp-content/uploads/2023/12/Online-Recruitment-of-Vulnerable-Populations-for-Forced-Labor.pdf [https://perma.cc/6J5M-KTLA].

[7] *See, e.g.*, Brishen Rogers, *The Law and Political Economy of Workplace Technological Change*, 55 HARV. C.R.-C.L. L. REV. 531, 532 (2020) (describing how, as a result of technological progress, artificial intelligence and machine learning provide employers with tools "to monitor and manage workers in new ways").

[8] *See, e.g.*, Complaint for Violations of the Trafficking Victims Protection Act & Racketeer Influenced & Corrupt Organizations Act at 46, Hubbard v. Crow, No. 2:22-cv-7957 (C.D. Cal. Nov. 11, 2022) (alleging that the manager required the victim of trafficking to "ask permission to use her phone and keep location services turned on so he could track her" and threatened to "arrive at her home within 20 minutes" if she turned off location services); Complaint & Demand for Jury Trial at 21, Doe v. Cerqueira, No. 1:21-cv-00370 (D. Me. Dec. 21, 2021) (alleging that the Defendant, her employer, tracked the Plaintiff's location on her phone).

[9] Doxing refers to the public release of private, personal information like addresses, social security numbers, employer information, or other sensitive details, without an individual's consent and often with malicious intent. *See, e.g.*, DANIELLE KEATS CITRON, HATE CRIMES IN CYBERSPACE 53 (2014) (defining doxing to include when "[t]rolls post individuals' phone numbers, addresses, and social security numbers"). Non-consensual pornography or "revenge pornography" refers to "the distribution of sexually graphic images of individuals without their consent." *See* Danielle Keats Citron & Mary Anne Franks, *Criminalizing Revenge Porn*, 49 WAKE FOREST L. REV. 345, 346 (2014) (noting that nonconsensual pornography includes both images obtained without consent, like hidden recordings, and those obtained with consent but later distributed without consent).

[10] *See, e.g.*, Complaint at 151, Edmondson v. Raniere, No. 1:20-cv-00485 (E.D.N.Y. Jan. 28, 2020) (alleging that the Defendant kept sexually explicit photos and videos as collateral to ensure that the Plaintiffs would comply with his demands); *see also* Rogers, *supra* note 7, at 535 (exploring how employers can deploy technologies to increase their control over workers).

isolate those in the workplace.[11] Finally, as the nature of work moves online, websites and social media platforms can host forced labor content online, making labor trafficking more visible and raising new questions about who should be held accountable.[12]

This Article explores these evolving practices of "digital servitude," which I use to refer to forced labor practices facilitated by information and communications technology (ICT).[13] For over a decade, global policymakers,

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[11] *See, e.g.*, Complaint at 3, Iyengar v. Balasubramaniam, No. 2:20-cv-13942 (D.N.J. Oct. 5, 2020) (alleging that the Defendant took the Plaintiff's cell phone in addition to identity documents to isolate her socially from the world); Complaint for: 1. Involuntary Servitude (18 U.S.C. § 1584) 2. Forced Labor (18 U.S.C. § 1589) 3. Trafficking with Respect to Forced Labor or Involuntary Servitude (18 U.S.C. § 1590) 4. Conspiracy to Violate the Trafficking Victims Protection Reauthorization Act (18 U.S.C. § 1594) 5. Obstructing Enforcement of the Trafficking Victims Protection Reauthorization Act (18 U.S.C. § 1590(b)) 6. Benefitting Financially from Trafficking in Persons (18 U.S.C. § 1593A) 7. Unpaid Labor (29 U.S.C. § 201 *et seq.*) 8. Unpaid Wages (California Labor Code §§ 1197, 226.7, 1198.5, 203) 9. Racketeering (18 U.S.C. § 1961 *et seq.*) 10. Sexual Battery (California Civil Code § 1708.5) 11. Gender Violence (California Civil Code § 52.4) at 44, Martin v. La Luz Del Mundo, No. 2:20-cv-01437 (C.D. Cal. Feb. 12, 2020) [hereinafter *Martin* Complaint] (claiming that the Defendants engaged in "smear campaign[s]" on social media to harm the reputation of those who left La Luz Del Mundo, a religious organization that included individuals accused of forced labor and sexual abuse); Complaint at 9, Singh v. Singh, No. 3:23-cv-00339 (E.D. Va. May 22, 2023) (alleging that the Defendants turned off the Plaintiff's WIFI and his phone's data plan to prevent him from communicating with others).

[12] *See, e.g.*, Claire Duffy, *Facebook Has Known It Has a Human Trafficking Problem for Years. It Still Hasn't Fully Fixed It*, CNN BUSINESS, https://www.cnn.com/2021/10/25/tech/facebook-instagram-app-store-ban-human-trafficking/index.html [https://perma.cc/XY4R-VL4Y] (Oct. 25, 2021) (describing forced labor content on Instagram and efforts by Facebook to detect and remove domestic servitude content); Owen Pinnell & Jess Kelly, *Slave Markets Found on Instagram and Other Apps*, BBC NEWS ARABIC (Oct. 31, 2019), https://www.bbc.com/news/technology-50228549 [https://perma.cc/JCU9-RN9U] (exploring how Instagram and algorithm-boosted hashtags reportedly facilitated the sale of domestic workers in the Middle East); *Maids for Sale: How Silicon Valley Enables Online Slave Markets*, BBC NEWS (Nov. 1, 2019), https://www.bbc.com/news/av/technology-50240012 [https://perma.cc/T8QF-TJQY] (showing how Google, Apple, and Instagram hosted apps and content that reportedly facilitated forced labor practices); *see also* Indictment at 11, United States v. Gibbs, No. 1:23-cv-00035 (D. Del. Apr. 13, 2023) (alleging that the Defendant recruited vulnerable women who he coerced to steal items from stores and posted these items for sale on Facebook Marketplace, eBay, and online); Complaint at 1, 6, Johnson v. Town of Greece, No. 6:23-cv-06441 (W.D.N.Y. Aug. 4, 2023) (alleging that the Defendant used forced labor to repair and refurbish vehicles, which he then re-sold "on platforms like Facebook Marketplace for a significant profit").

[13] ICT is an evolving term that refers to any product that has the capacity to store, transfer, receive, or manipulate information in digital form, including smartphones, email, personal messaging, and robots. Technology-facilitated trafficking initially referred to how ICT, including social media, mobile phones, and the internet, facilitated human trafficking, but as technology has evolved to include forms of machine learning, artificial intelligence, and deepfake technology, scholars have begun to explore how these emerging technologies too can facilitate human trafficking. *See* MARK LATONERO, USC ANNENBERG CTR. ON COMMC'N LEADERSHIP & POL'Y, THE RISE OF MOBILE AND THE DIFFUSION OF TECHNOLOGY-FACILITATED TRAFFICKING 9–12 (2012), https://core.ac.uk/download/pdf/71360206.pdf [https://perma.cc/QS6A-W9PQ] (examining how mobile technologies facilitate sex trafficking, particularly domestic minor sex trafficking); PHIL BENNETT, ORG. FOR SEC. & COOP. EUR., NEW FRONTIERS: THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE TO FACILITATE TRAFFICKING IN PERSONS 13 (2024), https://www.osce.org/files/f/documents/7/d/579715.pdf [https://

activists, and scholars have warned of the growing prominence of technology-facilitated trafficking.[14] According to the Interagency Coordination Group Against Trafficking in Persons, a policy forum mandated by the United Nations General Assembly, perpetrators of trafficking now use technology at "all the stages of the crime, including recruitment, control, and exploitation of victims."[15] The Council of Europe has called for policies to address "the operational . . . challenges" presented by technology and human trafficking.[16] The Organization for Security and Co-operation in Europe has warned that strengthened measures "are urgently required."[17] With advances in machine learning, artificial intelligence (AI), and deep fake technology, these concerns have become particularly acute as perpetrators use these tools to expand their reach and intensify coercive tactics.[18] Yet, international attention remains fo-

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perma.cc/XSF4-QMAC] ("Therefore, as generative AI improves, it is likely to be used by traffickers looking to reach new communities, increase the scale of the crime through automation and avoid detection."); Airin Ri, *The Impact of Emerging AI on Sex Trafficking*, L.J. FOR SOC. JUST. (Oct. 6, 2024), https://lawjournalforsocialjustice.com/2024/10/06/the-impact-of-emerging-ai-on-sex-trafficking/ [https://perma.cc/876Q-7EXF] ("Traffickers increasingly use AI to automate and expand the scope of their operations, targeting vulnerable individuals through online platforms and social media.").

[14] *See, e.g.*, OFF. SPECIAL REPRESENTATIVE & CO-ORDINATOR FOR COMBATING TRAFFICKING HUM. BEINGS, ORG. FOR SEC. & COOP. EUR., POLICY RESPONSES TO TECHNOLOGY-FACILITATED TRAFFICKING IN HUMAN BEINGS: ANALYSIS OF CURRENT APPROACHES AND CONSIDERATIONS FOR MOVING FORWARD 2 (2022), https://www.osce.org/files/f/documents/0/d/514141.pdf [https://perma.cc/HMP9-NLR9] (defining technology-facilitated trafficking in human beings and providing policy recommendations to address it); PAOLO CAMPANA, COUNCIL EUR., ONLINE AND TECHNOLOGY-FACILITATED TRAFFICKING IN HUMAN BEINGS: SUMMARY AND RECOMMENDATIONS 5 (2022), https://rm.coe.int/online-and-technology-facilitated-trafficking-in-human-beings-summary-/1680a5e10c [https://perma.cc/SEE3-XD8U] (noting how ICT impacts technology-facilitated human trafficking, "pos[ing] challenges—as well as opportunities—to law enforcement and NGOs alike"); Office on Trafficking in Persons, *Infographic: Technology-Facilitated Human Trafficking*, U.S. DEP'T OF HEALTH & HUM. SERVS. ADMIN. FOR CHILD. & FAMILIES (July 29, 2022), https://www.acf.hhs.gov/otip/infographic/technology-facilitated-human-trafficking-infographic [https://perma.cc/72AW-GX2S] (providing an infographic that "illustrates how traffickers leverage technology to exploit individuals").

[15] INTER-AGENCY COORDINATION GRP. AGAINST TRAFFICKING PERSONS, HUMAN TRAFFICKING AND TECHNOLOGY: TRENDS, CHALLENGES AND OPPORTUNITIES 1 (2019), https://icat.un.org/sites/g/files/tmzbdl461/files/human_trafficking_and_technology_trends_challenges_and_opportunities_web.pdf [https://perma.cc/4MZY-KXHA]. This Article uses the term, "perpetrator," to refer to those who commit human trafficking conduct. It recognizes that often those who commit human trafficking may also be survivors of human trafficking, and the terms, "victim" and "perpetrator," are often problematic, reinforcing a binary that frequently does not exist. *See* Rachel J. Wechsler, *The Non-Punishment Principle and Restorative Justice*, 174 U. PA. L. REV. (forthcoming 2026).

[16] CAMPANA, *supra* note 14, at 5 (drawing attention to the challenges of "detecting, investigating and prosecuting . . . , as well as identifying victims and raising awareness among at-risk groups").

[17] OFF. SPECIAL REPRESENTATIVE & CO-ORDINATOR FOR COMBATING TRAFFICKING HUM. BEINGS, *supra* note 14, at 10.

[18] *See* Ifeoma Ajunwa, *AI and Captured Capital*, 134 YALE L.J.F. 372, 374 (2025) (exploring how "worker exploitation is found not only in the development of AI technologies, but also in their *deployment* in the workplace"); BENNETT, *supra* note 13, at 6 (pointing to a lack of research on "the risks of AI-enabled human trafficking, despite there being clear use-cases"); Ri, *supra* note 13 (explaining how "[a]dvances in AI technologies allow traffickers to manipulate appearances and identi-

cused on the prevalence of online sex trafficking, with relatively little awareness about how technology intersects with forced labor.[19]

Similarly, in the United States, policy makers have concentrated their efforts on online sex trafficking,[20] leaving labor trafficking a site of pervasive state inaction.[21] Labor trafficking criminal investigations and prosecutions remain rare, making it difficult to identify and understand trends in the field.[22] In 2023, the U.S. Department of Justice initiated just five federal forced labor cases, compared to 197 federal sex trafficking cases.[23] Significant barriers remain to investigating and prosecuting labor trafficking cases.[24] Forced labor prosecutions are complex and frequently dependent on survivor testimony.[25] Moreover, labor trafficking often occurs under the radar and is less visible to

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ties more than ever before, making it easier for traffickers to evade detection and continue the criminal exploitation of individuals").

[19] *See generally supra* notes 14–17 (demonstrating the prominence of technology-facilitated trafficking and focusing predominantly on online sex trafficking).

[20] *See, e.g.*, U.S. DEP'T OF STATE, *supra* note 2 (describing how "[t]raffickers adapt advancing technologies to recruit and exploit victims online, for example through applications that use encryption and default deletion of content, and utilize convertible virtual currency to facilitate the crime"); Office on Trafficking in Persons, *supra* note 14 (noting that "[t]raffickers leverage technology to exploit individuals for human trafficking").

[21] *See, e.g.*, Amy Farrell et al., *Policing Labor Trafficking in the United States*, 23 TRENDS IN ORGANIZED CRIME 36, 36 (2019) (explaining how "US law enforcement struggles to integrate labor trafficking enforcement with traditional policing routines and roles," resulting in "few labor trafficking cases . . . [being] identified and prosecuted"); ALICIA W. PETERS, RESPONDING TO HUMAN TRAFFICKING: SEX, GENDER, AND CULTURE IN THE LAW 159 (2015) ("While prosecutors were theoretically open to pursuing all types of trafficking cases and held nuanced understandings of the similarities between trafficking into forced prostitution and forced labor, they also had heavy case loads and relied on law enforcement investigators to bring them meritorious cases."); Annie Smith, *The Underprosecution of Labor Trafficking*, 72 S.C. L. REV. 477, 478 (2020) ("Since [2000], only a tiny percentage of federal human trafficking prosecutions have involved labor trafficking; the vast majority involve sex trafficking."); LINDSEY LANE, ANGELA GRAY, ALICEN RODOLPH & BRITTANY FERRIGNO, HUM. TRAFFICKING INST., 2023 FEDERAL HUMAN TRAFFICKING REPORT 14 (2024), https://traffickinginstitute.org/wp-content/uploads/2024/06/2023-Federal-Human-Trafficking-Report-WEB-Spreads-LR.pdf [https://perma.cc/ELN8-6PSC] ("Historically, the number of sex trafficking prosecutions has significantly surpassed the number of forced labor cases filed.").

[22] *See, e.g.*, Smith, *supra* note 21, at 478; LANE ET AL., *supra* note 21, at 14 ("Over the past 5 years, 3% of new criminal cases filed were forced labor, 97% were sex trafficking.").

[23] LANE ET AL., *supra* note 21, at 2.

[24] *See, e.g.*, LINDSEY LANE, ANGELA GRAY, ALICEN RODOLPH & BRITTANY FERRIGNO, HUM. TRAFFICKING INST., 2022 FEDERAL HUMAN TRAFFICKING REPORT 15 (2023), https://traffickinginstitute.org/wp-content/uploads/2023/06/2022-Federal-Human-Trafficking-Report-WEB-LR.pdf [https://perma.cc/J7V8-6M23] (describing the challenges that prosecutors face in bringing forced labor claims).

[25] *See id.* (explaining how "forced labor investigations and prosecutions can be incredibly complex and difficult to prove, as they often involve issues such as debt bondage, immigration status, and methods of coercion that are distinct from those methods used in sex trafficking cases").

law enforcement than sex trafficking.[26] These and other challenges make it hard to understand labor trafficking and its connection to technology.[27]

Nevertheless, recent legal advances enable new understandings of labor trafficking. In the last two decades, the U.S. Congress and federal courts have recognized a broader range of coercive tactics as servitude, a marked departure from the Thirteenth Amendment doctrine of the twentieth century.[28] In 1988, in *United States v. Kozminski*, the U.S. Supreme Court interpreted the Thirteenth Amendment's prohibition against involuntary servitude narrowly to include only actual or threatened physical or legal restraint.[29] In response, U.S. Congress passed the Victims of Trafficking and Violence Protection Act of 2000 to broaden legal understandings of involuntary servitude and criminalize forced labor.[30] Since then, coercion has become a cornerstone of forced labor cases, allowing courts to recognize more subtle threats of economic, reputational, and psychological harm used to compel work.[31] As a result, federal court pleadings now reflect a wider range of tactics and allow researchers to better understand the diverse tactics at play in labor trafficking cases, including the role of technology.[32]

Additionally, civil labor trafficking cases have dramatically increased in the last two decades.[33] In 2003, Congress created the federal civil remedy for forced labor and involuntary servitude claims, providing plaintiffs with new avenues for civil damages.[34] The legislation allowed plaintiffs to seek compen-

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[26] *See id.* (noting how "[t]he lack of visibility in forced labor cases makes it difficult to identify potential victims or gather evidence against a trafficker").

[27] *See infra* Part I.B for a further description of the challenges faced in labor trafficking investigations and prosecutions.

[28] Kathleen Kim, *The Coercion of Trafficked Workers*, 96 IOWA L. REV. 409, 439 (2011).

[29] 487 U.S. 931, 952 (1988) (finding that "[a]bsent change by Congress . . . for purposes of criminal prosecution under § 241 or § 1584, the term 'involuntary servitude' necessarily means a condition of servitude in which the victim is forced to work for the defendant by the use or threat of physical restraint or physical injury, or by the use or threat of coercion through law or the legal process").

[30] *See generally* Victims of Trafficking and Violence Protection Act (TVPA) of 2000, Pub. L. No. 106-386, 114 Stat. 1464 (2000) (establishing the crime of forced labor to criminalize the use of psychological coercion to make an individual work).

[31] *See infra* Part I.C.1.

[32] *See infra* Part I.C.1.

[33] ASHLYN PHELPS, THE HUM. TRAFFICKING LEGAL CTR., USING CIVIL LITIGATION TO COMBAT HUMAN TRAFFICKING: TWENTY YEARS OF CIVIL LITIGATION UNDER THE TRAFFICKING VICTIMS PROTECTION REAUTHORIZATION ACT: 2003–2023, at 6–8 (2024), https://htlegalcenter.org/wp-content/uploads/Civil-Litigation-Report-2023.pdf [https://perma.cc/U566-RUEX] (describing "exponential growth" in civil trafficking filings from 2003 to 2023, including 477 civil federal labor trafficking claims filed).

[34] Trafficking Victims Protection Reauthorization Act of 2003, Pub. L. No. 108-193, § 4(a)(3)(A), 117 Stat. 2875, 2878 (2003) (codified at 8 U.S.C. § 1595 (2018)) [hereinafter TVPRA of 2003]. The 2003 TVPRA authorized federal civil claims for violations of sections 1589 (forced labor), 1590 (trafficking with respect to peonage, slavery, involuntary servitude, or forced labor), and 1591 (sex trafficking) of the U.S. Code.

satory and punitive damages against perpetrators of forced labor and involuntary servitude.[35] Congress eventually expanded the civil remedy also to permit civil actions against institutions or parties who knowingly benefited from the trafficking violation.[36] These collective advances created new incentives for labor trafficking survivors to pursue civil claims in federal courts.[37] As a result, federal labor trafficking civil claims have surged. From 2003 to 2023, plaintiffs filed 502 civil labor trafficking cases in federal court.[38] These cases, combined with insights from criminal labor trafficking prosecutions, offer valuable new lessons about labor trafficking in the United States.

This Article is the first to examine how technology intersects with forced labor and involuntary servitude in the United States.[39] One contribution of this Article is to offer a descriptive account of how technology manifests in federal labor trafficking cases.[40] By analyzing federal civil and criminal complaints, it begins to map out how technology can facilitate communication with workers, expand access to personal information of workers, and obscure efforts by workers to discern between legitimate and exploitative work.[41] Technology can also amplify the reach of coercive tactics by providing efficient ways to monitor, control, and punish workers.[42] Moreover, this Article explores how forced

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[35] 18 U.S.C. § 1595 (2018); *see* Julie Dahlstrom, *Trafficking to the Rescue?*, 54 U.C. DAVIS L. REV. 1, 25 (2020) (exploring how the civil remedy provided plaintiffs with avenues to damages, attorneys' fees, and federal jurisdiction to explore their claims).

[36] *See* William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008, Pub. L. No. 110-457, § 222, 122 Stat. 5044 (2008) [hereinafter TVPRA of 2008]. See *infra* Part I.C.2, for a discussion of federal civil trafficking liability.

[37] Civil claims have a lower burden of proof and are not dependent on prosecutors to initiate the cases. These factors, among others, help to explain why there are more civil labor trafficking filings than criminal labor trafficking cases in the United States.

[38] PHELPS, *supra* note 33, at 8 (showing that plaintiffs filed 477 labor trafficking federal civil claims and 25 additional cases involving both sex and labor trafficking).

[39] There has been much research about how technology can fight labor trafficking, but this Article primarily focuses on how technology can facilitate labor trafficking. *See* Sanja Milivojevic, Heather Moore & Marie Segrave, *Freeing the Modern Slaves, One Click at a Time: Theorising Human Trafficking, Modern Slavery, and Technology*, 14 ANTI-TRAFFICKING REV. 16, 21–23 (2020) (describing the rising use of ICT, such as facial recognition technology, to disrupt trafficking and calling for more empirical research to support its use); Laurie Berg, Bassina Farbenblum & Angela Kintominas, *Addressing Exploitation in Supply Chains: Is Technology a Game Changer for Worker Voice?*, 14 ANTI-TRAFFICKING REVIEW 47, 48–49 (2020) (exploring the promises and perils of technology solutions aimed at combating trafficking). This Article builds upon the work of Mark Latonero, Bronwyn Wex, and Meredith Dank, who found that "[m]obile technologies in particular play an important role in contemporary mobility and migration" and called for further research on the connection between labor trafficking and technology. *See* MARK LATONERO, BRONWYN WEX & MEREDITH DANK, USC ANNENBERG CTR. ON COMMC'N LEADERSHIP & POL'Y, TECHNOLOGY AND LABOR TRAFFICKING IN A NETWORK SOCIETY 8 (2015), https://bpb-us-w1.wpmucdn.com/sites.usc.edu/dist/2/672/files/2015/10/USC_Tech-and-Labor-Trafficking_Feb2015.pdf [https://perma.cc/C7MQ-KEG5].

[40] *See infra* Part II.

[41] *See infra* Part II.

[42] *See infra* Part II.B.

labor content can move online, as perpetrators engage in messaging to recruit workers or sell goods made from forced labor, raising new questions about corporate accountability.[43]

Ultimately, the Article explores how existing federal anti-trafficking statutes can better take account of these technological advances. It argues that federal courts should interpret the forced labor statute, including the concept of "serious harm," to take account how technology-facilitated coercion can cause psychological, economic, and other harm.[44] It also shows that, as employers turn to technology to recruit and obtain workers, technology presents investigators and litigants with new opportunities to document and strengthen forced labor claims.[45] Federal trafficking law, with robust civil and criminal remedies, can open important new avenues to hold companies and institutions that financially benefit from digital servitude accountable. Also, the Article examines barriers to accountability, including Section 230 of the Communications Decency Act and the recent ruling in *Doe 1 v. Apple, Inc.*, which may limit the reach of trafficking claims, especially in relation to forced labor abroad and online forced labor content.[46]

Finally, the Article adds to the literature at the intersection of technology and work law to unearth the role of forced labor remedies to address workplace harms associated with technology.[47] Technology scholars have long raised concerns how employers deploy technology to increase power disparities in the workplace.[48] Employers now use increasingly sophisticated technological tools, which can collect vast troves of personal information, manage worker productivity, and engage in invasive surveillance.[49] These changes occur amidst the "fissuring" of traditional workplaces, leading to more employers

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[43] *See infra* Part II.C.

[44] 18 U.S.C. § 1589(c)(2) (defining "serious harm" in the context of forced labor to include "any harm, whether physical or nonphysical, including psychological, financial, or reputational harm, that is sufficiently serious, under all the surrounding circumstances, to compel a reasonable person of the same background and in the same circumstances to perform or to continue performing labor or services in order to avoid incurring that harm"); *see also infra* Part III.C.

[45] *See infra* Part III.A.

[46] *See* 47 U.S.C. § 230 (2018) (prohibiting civil claims against companies for content posted online by third parties); Doe 1 v. Apple, Inc., 96 F.4th 403, 405 (D.C. Cir. 2024) (failing to hold technology companies liable for support of child labor in cobalt mining operations in the Democratic Republic of Congo).

[47] *See infra* Part I.C.3.

[48] *See, e.g.*, Veena Dubal, *On Algorithmic Wage Discrimination,* 123 COLUM. L. REV. 1929, 1931 (2023) ("Scholars and advocates have raised concerns about the growing limitations on worker privacy and autonomy, the potential for society-level discrimination to seep into machine learning systems, and a general lack of transparency on workplace rules."); Woodrow Hartzog, Evan Seligner & Johanna Gunawan, *Privacy Nicks: How the Law Normalizes Surveillance*, 101 WASH. U. L. REV. 717, 717 (2024) (exploring the prevalence of privacy nicks in our daily lives, including workplaces, and arguing that the "law is complicit in normalizing surveillance").

[49] Dubal, *supra* note 48, at 1931.

using staffing agencies, gig workers, or subcontractors, and weakening legal protections for workers.[50] Against this backdrop, existing employment and contract law is frequently inadequate to address workplace harms,[51] and this Article contends that labor trafficking laws can serve as one crucial legal remedy for workers who experience digital servitude.

This Article proceeds in three parts. Part I explores the evolution of responses to technology-facilitated trafficking in the United States and historic challenges to understanding how technology facilitates forced labor.[52] Part II maps out a descriptive account of digital servitude in the United States based on federal forced labor and involuntary servitude pleadings.[53] Importantly, it draws attention to practices of online recruitment, technology-facilitated coercive control, and changes in the nature of work itself.[54] Part III offers recommendations to improve the identification of digital servitude and strengthen labor trafficking cases.[55] Moreover, it focuses on how technology may help investigators document digital servitude, examines the potential for civil lawsuits to promote corporate accountability, and encourages proactive steps by companies to guard against forced labor goods and content online.[56] Ultimately, the Article posits that a better understanding of the digital footprint of forced labor is the first step toward a more comprehensive legal approach that combats such practices in the United States and beyond.

I. UNDERSTANDING TECHNOLOGY-FACILITATED TRAFFICKING

This Part explores the evolution of legal and policy responses to technology-facilitated trafficking in the United States. In the 2000s, advances in technology and the internet led policymakers and advocates to focus almost exclusively on online sex trafficking. Early research highlighted a strong connection between sex trafficking, online recruitment, and commercial sex ads, but it did not find a similar link with labor trafficking. Yet, as technology increasingly shapes the lives of workers and employers, it posits that there is a need to better understand how technology intersects with forced labor.

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[50] *See* Andrew Elmore, *Franchise Regulation for the Fissured Economy*, 86 GEO. WASH. L. REV. 907, 909 (2018) (describing how companies may outsource labor to contractors and other providers to "reduce management costs, the need for upfront capital, the risk of liability, and business failure").

[51] *See, e.g.*, Matthew T. Bodie, *The Law of Employee Data: Privacy, Property, Governance*, 97 IND. L.J. 707, 735, 743 (2022) (proposing a "new regime for worker data" because "[t]raditional paradigms within the employment relationship are breaking down"); Jonathan F. Harris, *Consumer Law as Work Law*, 112 CALIF. L. REV. 1, 23–24 (2024) (examining the limits of contract and employment law to address workplace harms experienced in the modern workplace).

[52] *See infra* Part I.A.

[53] *See infra* Part II.

[54] *See infra* Part II.

[55] *See infra* Part III.

[56] *See infra* Part III.

A. Targeting Technology-facilitated Trafficking

Since the internet began, perpetrators of human trafficking have reportedly used technology to facilitate human trafficking in the United States.[57] In the 2000s, perpetrators of sex trafficking began to use online advertisement websites, such as Craigslist, to post commercial sex ads online.[58] They used social networking sites, like Myspace and Facebook, to find and recruit potential victims more easily.[59] Federal legislators and law enforcement raised alarms as evidence grew about sex trafficking content online.[60] In 2009, Sheriff Thomas Dart in Cook County, Illinois, filed a lawsuit against Craigslist, alleging that the website "create[d] a market for human trafficking."[61] Thereafter, eighteen state attorneys general called for the removal of the adult advertisement section of Craigslist, noting that ads involving sex trafficking of children were "rampant" on the site. Public pressure grew as Congress drew attention to the growing prevalence of children sexually exploited online.[62] Although ultimately unsuccessful in shuttering Craigslist, these efforts contributed to a public outcry as awareness grew about online sex trafficking.[63]

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[57] *See, e.g.*, UNODC, GLOBAL REPORT ON TRAFFICKING IN PERSONS 2020, at 119 (2021), https://www.unodc.org/documents/data-and-analysis/tip/2021/GLOTiP_2020_15jan_web.pdf [https://perma.cc/Z9QL-ZSUD] (identifying the first reported case of the use of the internet to facilitate trafficking as in 2004).

[58] *See, e.g.*, MARK LATONERO, USC ANNENBERG CTR. ON COMMC'N LEADERSHIP & POL'Y, HUMAN TRAFFICKING ONLINE: THE ROLE OF SOCIAL NETWORKING SITES AND ONLINE CLASSIFIEDS 13 (2011), https://bpb-us-w1.wpmucdn.com/sites.usc.edu/dist/e/695/files/2011/09/HumanTrafficking_FINAL.pdf [https://perma.cc/AE6T-9L89] ("Craigslist, a free online classified site, received much attention for reports of sex trafficking via the 'Adult Services' . . . section of the site."); Representative Loretta Sanchez & Representative Ted Poe, *Craigslist Should Shun Sex Ads*, POLITICO (Sep. 2, 2010), https://www.politico.com/story/2010/09/craigslist-should-shun-sex-ads-041676 [https://perma.cc/RR75-3AYW] (describing reported commercial sex ads involving sex trafficking on Cragislist and calling for Craigslist to take greater measures to ensure the combat sex trafficking).

[59] *See* LATONERO, *supra* note 59, at 13 ("News reports have . . . connected Myspace and Facebook to cases of human trafficking, as traffickers use social networking sites to target victims and advertise their sexual services.").

[60] *See id.*

[61] *See id.* at 21 (noting that "[m]issing children, runaways, abused women, and women trafficked in from foreign countries are routinely forced to have sex with strangers because they're being pimped on Craigslist"); Complaint at 2, Dart v. Craigslist, Inc., No. 1:09-cv-01385 (N.D. Ill. Mar. 5, 2009).

[62] For example, Congresswoman Jackie Speier testified about the rising prevalence of online child sex trafficking, warning that perpetrators can "hide behind their personal computers and have a child at their doorstep with a click of a button." *See Domestic Minor Sex Trafficking: Hearing Before the Subcomm. on Crime, Terrorism, & Homeland Sec. of the H. Comm. on the Judiciary*, 111th Cong. 9–12 (Sep. 15, 2010) (statement of Rep. Jackie Speier) (speaking in support of the Domestic Minor Sex Trafficking Deterrence and Victims Support Act of 2010 and sharing concerns that the rise of online sex trafficking of children).

[63] *See Dart*, No. 1:09-cv-01385 at 20 (N.D. Ill. Oct. 20, 2009) (dismissing civil complaint, finding that Craigslist was immune from civil liability due to Section 230 of the Communications Decency Act of 1996); Mary Graw Leary, *History Repeats Itself: Some New Faces Behind Sex Trafficking Are More Familiar Than You Think*, 68 EMORY L.J. ONLINE 1083, 1091 (2019), https://scholarlycommons.law.emory.edu/elj-online/9/ [https://perma.cc/6JJK-3FLG] (noting that Craigslist eventually removed

Since then, Congress has intensified its focus on online sex trafficking, seeking to develop more effective legal tools to combat it. Although Congress adopted an inclusive definition of trafficking in persons in 2000 to include both sex and labor trafficking, efforts to address "technology-related trafficking" primarily focused on online sex trafficking.[64] Congress passed the William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008, tasking the National Institute of Justice with studying internet-based businesses and services that facilitated online sex trafficking.[65] Importantly, the legislation authorized a "comprehensive study to examine the use of Internet-based businesses and services by criminal actors in the sex industry, and to disseminate best practices for investigation and prosecution of trafficking and prostitution offenses involving the Internet."[66] In response, academic and governmental officials convened in Washington, DC to establish the Center for Communication Leadership & Policy Technology & Trafficking Initiative (Initiative), one of the first U.S.-based efforts to study technology-facilitated trafficking.[67]

While motivated by concerns about online sex trafficking, the Initiative aimed to address both sex and labor trafficking.[68] Yet, early research uncovered little evidence of a connection between labor trafficking and technology.[69] Several factors impeded researchers' efforts.[70] Victims of labor trafficking often relied on brokers and word of mouth—not the internet—to learn of jobs abroad.[71] Also, the unique dynamics of labor trafficking complicated efforts to

its "erotic services" section following "significant pressure from many of the country's state attorneys general"); Elizabeth Donovan, Note, *Fight Online Sex Trafficking Act and Stop Enabling Sex Traffickers Act: A Shield for Jane Doe*, 52 CONN. L. REV. 85, 92 (2020) (describing how the litigation against Craigslist and a subsequent high profile murder of someone posted online on Craigslist that led "to pressure from law enforcement and the public" that resulted in removing its "erotic services" category).

[64] *See e.g.*, LATONERO, *supra* note 59, at 8–9.

[65] TVPRA of 2008, Pub. L. No. 110-457, § 237(c)(2)(A), 122 Stat. 5044, 5080 (2008).

[66] *Id.*

[67] LATONERO, *supra* note 59, at iv–v. The TVPRA of 2008 was followed by further congressional efforts to understand and combat online sex trafficking. *See, e.g.*, Trafficking Victims Protection Reauthorization Act of 2013, H.R. 898, 113th Cong. § 111 (2013) (asking the Senior Policy Operating Group to submit to Congress a report on "Internet-facilitated human trafficking"); Trafficking Victims Protection Reauthorization Act of 2022, Pub. L. No. 117-348, § 124, 136 Stat. 6211 (2022) (directing the National Science Foundation to research the connection between social media and human trafficking).

[68] LATONERO, *supra* note 59, at 8.

[69] *Id.* at 17 (noting that "researchers did not discover evidence of traffickers utilizing the Internet to facilitate labor trafficking, perhaps due to the circumstances typically surrounding this form of trafficking").

[70] *Id.* at 17–18.

[71] *Id.* at 17 ("Research suggests that victims often are recruited from impoverished regions and typically learn about opportunities via word of mouth. Once recruited, workers may be isolated, without access to technology.").

identify and document labor trafficking trends.[72] Unlike online sex trafficking where the commercial sex ad itself was evidence of commercial sex, researchers found it hard to discern between illicit and legitimate job postings published online.[73] Moreover, the small number of labor trafficking prosecutions made it difficult to identify trends from existing court filings and press releases.[74] As a result, little was known about technology's role in labor trafficking.

Since then, there have been significantly more efforts to refine legal tools to address online sex trafficking. Federal prosecutors advocated broader interpretations of "interstate commerce" to ensure the ability to prosecute sex trafficking cases where ads were placed online.[75] Prosecutors brought cases against individuals operating online platforms hosting commercial sex ads and seized websites hosting the content.[76] Congress passed federal legislation, Allow States and Victims to Fight Online Sex Trafficking Act of 2018 (FOSTA), carving out an exception to Section 230 of the Communications Decency Act and permitting civil lawsuits against online platforms that facilitate online sex trafficking.[77] Moreover, the federal government poured money and resources into programs like the Internet Crimes Against Children Task Force Program and Anti-Trafficking Coordination Initiative,[78] which increased prosecutions and heightened awareness

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[72] *Id.* at 18. Mark Latonero noted that that if job recruitment moves online in the future, there "may be an opportunity" to study how technology connects with labor trafficking. *Id.*

[73] *Id.* ("Unless the recruiters, employers, or other details of their advertisements have already been identified for trafficking abuses, it is immensely difficult to design studies wherein observing online communications alone will reveal disingenuous intentions."); *see also* Ada Volodko, Ella Cockbain & Bennett Kleinberg, *"Spotting the Signs" of Trafficking Recruitment Online: Exploring the Characteristics of Advertisements Targeted at Migrant Job-Seekers*, 23 TRENDS ORGANIZED CRIME 7, 23 (2020) (describing the challenges of researching forced labor through online ads because of the difficulties discerning between legitimate and illegitimate ads).

[74] LATONERO, *supra* note 59, at 16 (observing that of 103 human trafficking convictions in 2011, only 32 involved labor trafficking).

[75] *See* United States v. Myers, 430 F App'x 812, 817 (11th Cir. 2011).

[76] From 2014 to 2020, the U.S. Department of Justice initiated at least eleven federal criminal cases against individuals who operated online platforms that hosted online commercial sex ads. U.S. GOV'T ACCOUNTABILITY OFF., SEX TRAFFICKING: ONLINE PLATFORMS AND FEDERAL PROSECUTIONS 2 (2021), https://www.gao.gov/assets/gao-21-385.pdf [https://perma.cc/28HY-5NAS]; Press Release, Justice Department Leads Effort to Seize Backpage.com, the Internet's Leading Forum for Prostitution Ads, and Obtains 93-Count Federal Indictment (Apr. 9, 2018), https://www.justice.gov/archives/opa/pr/justice-department-leads-effort-seize-backpagecom-internet-s-leading-forum-prostitution-ads [https://perma.cc/3CQW-WKPJ]. Beginning in 2014, federal authorities seized websites responsible for facilitating prostitution and sex trafficking, which led to the seizure of Backpage.com, the largest online website for commercial sex ads. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra*, at 10.

[77] The legislation amended the U.S. Code to set out a new crime for those who control online platforms "with the intent to promote or facilitate the prostitution of" others and encouraged greater research on the use of civil litigation and criminal restitution for those who facilitate online sex trafficking. Allow States and Victims to Fight Online Sex Trafficking Act (FOSTA) of 2017, Pub. L. No. 115-164, § 8, 132 Stat. 1255–56; 18 U.S.C. § 2421A(a), (b).

[78] *Internet Crimes Against Children Task Force Program*, U.S. DEP'T OF JUST. OFF. OF JUV. JUST. AND DELINQ. PREVENTION, https://ojjdp.ojp.gov/programs/internet-crimes-against-children-

of online sex trafficking. Although understanding and tools for combating online sex trafficking have improved, there has been relatively little progress in understanding how technology can facilitate forced labor.

B. Evolving Understandings of Digital Servitude

In the last decade, there has been a fundamental shift in technology's role in the daily lives of workers, changing how workers and employers interact with devices, online platforms, and emerging technologies.[79] Cell phone and internet usage has dramatically risen in the United States and across the developing world.[80] Recent studies have found that a majority of adults in emerging and developing economies own or have access to a mobile phone,[81] a number that only increased after the COVID-19 pandemic.[82] As a result, websites, apps, and social media now play a significant role in how workers connect with employers and communicate at work.

Since the 1990s, when Monster.com launched,[83] e-recruitment has grown dramatically.[84] Job seekers now use a range of online platforms, including In-

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task-force-program [https://perma.cc/A3YV-QX6Z]; U.S. DEP'T OF JUST., ANTI-TRAFFICKING COORDINATION TEAM (ACTEAM) INITIATIVE FACT SHEET, https://www.justice.gov/archives/opa/file/623176/dl [https://perma.cc/9EF2-7XEL].

[79] *See, e.g.*, LATONERO ET AL., *supra* note 39, at iv (finding that "new information and communication technologies (ICTs) have become an integral part of the networks that underpin labor trafficking in the 21st Century" and calling for more empirical research).

[80] *See, e.g.*, RICHARD WIKE ET AL., PEW RSCH. CTR., SOCIAL MEDIA SEEN AS MOSTLY GOOD FOR DEMOCRACY ACROSS MANY NATIONS, BUT U.S. IS A MAJOR OUTLIER, (2022), https://www.pewresearch.org/global/2022/12/06/internet-smartphone-and-social-media-use-in-advanced-economies-2022/ [https://perma.cc/9TR6-TLGW].

[81] Laura Silver et al., *Mobile Connectivity in Emerging Economies*, PEW RSCH. CTR. (Mar. 7, 2019), https://www.pewresearch.org/internet/2019/03/07/mobile-connectivity-in-emerging-economies/ [https://perma.cc/R3VW-Y9UF] (surveying 28,122 adults in 11 countries). In the United States, there is substantially more cell phone usage—with 97% of Americans having access or owning a phone. *Mobile Fact Sheet*, PEW RSCH. CTR. (Apr. 7, 2021), https://www.pewresearch.org/internet/fact-sheet/mobile/ [https://perma.cc/R3XP-XLPK]. The segment of the population with access to a smartphone remains substantially in the majority across income, educational level, and age. *Id.*

[82] *See, e.g.*, Livia Jonnatan et al., *Mobile Device Usage Before and During the COVID-19 Pandemic Among Rural and Urban Adults*, 19 INT'L J. ENV'T RSCH. & PUB. HEALTH 10 (2022), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9315523/ [https://perma.cc/WD4Y-DDCB] ("Our findings indicated that people in rural and urban areas had a significant increase in their device use during the COVID-19 pandemic."); Khansa Chemnad et al., *Smartphone Usage Before and During COVID-19: a Comparative Study Based on Objective Recording of Usage Data*, 9 INFORMATICS 98, 110 (2022) (finding that the time spent on smartphones and social media increased since the inception of the COVID-19 pandemic).

[83] Bhupendra Singh Hada & Swati Gairola, *Opportunities & Challenges of E-Recruitment*, 2 J. MGMT. ENG'G. & INFO. TECH. 1, 1 (2015).

[84] The term, "e-recruitment," first surfaced in the 1980s as the public began to use the internet more widely. Prabjot Kaur, *E-recruitment: A Conceptual Study*, 1 INT'L J. APPLIED RSCH. 78, 78 (2015). Often synonymous with other terms like "electronic recruitment," "online recruitment," "cyber recruiting" and "internet recruiting," e-Recruitment refers to the "integration and use of internet technology to improve competence of [the] recruitment process." Ugo Chuks Okolie & Ikechukwu

deed, Zip Recruiter, Monster, Craigslist, and Snagajob, to find employment.[85] Many employers have now turned to social media, including Facebook, Twitter, and LinkedIn, to recruit workers.[86] These methods often enable perpetrators of labor trafficking to bypass traditional recruitment channels, such as in-person agencies and word-of-mouth advertising, which had previously characterized recruitment into forced labor.[87] Perpetrators can obtain a wealth of sensitive, private information online used to target workers for recruitment or engage in deceptive[88] or coercive recruitment practices.[89] Moreover, AI, machine learning, and deepfake technologies enable perpetrators to reach a broader audience and offer more effective ways for unscrupulous actors to evade detection.[90]

Scholars have observed the emergence of the "digital economy," as technological advancements have radically transformed every industry within the economy.[91] Even in industries traditionally reliant on manual labor, such as

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Emmanuel Irabor, *E-Recruitment Practices, Opportunities and Challenges*, 9 EUR. J. BUS. & MGMT. 116, 116 (2017); *see also* D. Shahila & R. Vijayalakshmi, *E-Recruitment Challenges*, 2 INT'L J. SOC. SCI. & INTERDISC. RSCH. 118 (2013); Avinash S. Kapse, Vishal S. Patil & Nikhil V. Patil, *E-Recruitment*, 1 INT'L J. ENG'G. & ADVANCED TECH. 82 (2012); L. Archana, G. V. Nivya & S. M. Thankam, *Recruitment Through Social Media Area: Human Resource*, 1 J. BUS. & MGMT. 37, 37 (2013); Hada & Gairola, *supra* note 83, at 1.

[85] Tawanna R. Dillahunt et al., *Examining the Use of Online Platforms for Employment: A Survey of U.S. Job Seekers*, CHI '21, at 1 (2021), https://dl.acm.org/doi/proceedings/10.1145/3411764 (proceedings of the 2021 CHI Conference on Human Factors in Computing Systems).

[86] *Id.* at 7; Pauline T. Kim & Sharion Scott, *Discrimination in Online Recruitment*, 63 ST. LOUIS U. L.J. 93, 94 (2018) ("Today, employment recruiting is increasingly moving onto social media platforms like Facebook."); Md. Sajjad Hosain et al., *E-recruitment: A Social Media Perspective*, 16 ASIAN J. ECON. BUS. & ACCT. 51, 52 (2020).

[87] *See, e.g.*, Kim & Scott, *supra* note 86, at 94–95 ("In 2015, an overwhelming majority of employers surveyed—eighty-four percent—reported using social media to recruit, and the proportion has likely gone up since then."); Dillahunt et al., *supra* note 85, at 65 (examining how job seekers use social media and job recruitment websites to find employment); *see also* LATONERO, *supra* note 59, at 17 ("Research suggests that victims often are recruited from impoverished regions and typically learn about opportunities via word of mouth.").

[88] *See* Towera Jessica Moyo, Omer Gunes & Marina Denise Jirtoka, *Investigating Human Trafficking Recruitment Online: A Study of Fraudulent Job Offers on Social Media Platforms*, 9 PROC. ACM HUM-COMPUT. INTERACTION 1, 4 (2015).

[89] *See, e.g.*, Kim & Scott, *supra* note 86, at 95 (describing lawsuits against Facebook for alleged unlawful discriminatory advertisements and exploring when employers should be held liable for unlawful discrimination in online recruitment practices).

[90] Ri, *supra* note 13; PHIL BENNETT, ORG. FOR SEC. & COOP. EUR., NEW FRONTIERS: THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE TO FACILITATE TRAFFICKING IN PERSONS 21 (2024), https://www.osce.org/files/f/documents/7/d/579715.pdf [https://perma.cc/UGY6-FWTU] (describing how perpetrators can use deep fake technology to create images or videos to engage in identity fraud).

[91] INT'L MONETARY FUND, MEASURING THE DIGITAL ECONOMY 2–3 (2018), https://www.imf.org/en/Publications/Policy-Papers/Issues/2018/04/03/022818-measuring-the-digital-economy [https://perma.cc/D5HB-NTQ2]; OECD, DIGITAL ECONOMY OUTLOOK 2024 (Volume 1) (2024), https://www.oecd-ilibrary.org/sites/a1689dc5-en/index.html?itemId=/content/publication/a1689dc5-en [https://perma.cc/Q4W8-3AWX]; CHARLES ET AL., *supra* note 3, at 9 (defining the digital economy to include the myriad ways that data, the internet, and technology impact models for business, production, and transactions).

agriculture, technology now plays a growing role.[92] Indeed, the majority of jobs in advanced economies is "digital labor," including jobs performed using digital technologies, ranging from content moderation to gig work to software development.[93] Digital labor includes a range of jobs, including ICT-intensive jobs, ICT-dependent jobs, and ICT-enhanced jobs. ICT-intensive jobs are positions where ICT is a central part of daily work, like data analysis, IT support, website development, and digital marketing, requiring advanced technical skills.[94] ICT-dependent jobs are positions where ICT connects to the core function, but the work itself may not require advanced technical skills, like content creators, gig work on Uber, or work on e-commerce websites.[95] ICT-enhanced jobs are those where ICT improves aspects of work performance, like efficiency, productivity, and job quality.[96] Thus, digital labor cuts across industries and accounts for a large percentage of the global economy.

As the digital economy expands, so also does the potential for forced labor within it. In 2015, Mark Latonero, Bronwyn Wex, and Meredith Dank issued a report, entitled "Technology and Labor Trafficking in a Network Society," finding ICT had "become an integral part of the networks that underpin labor trafficking in the 21st Century."[97] Drawing from the work of sociologist Manuel Castells and researcher Gustavo Cardoso, they argued that technology had fundamentally transformed interpersonal communication, altering "the frequency, capacity, distance, and speed of the 'information flows'" between individuals.[98] As a result, they suggested that technology can serve as the backbone for both positive and negative social interactions related to labor trafficking.[99] Researchers noted that technology can enable perpetrators to gather more information about workers, which they may use to manipulate or control them.[100] Additionally, they found, while studying migrant workers in the Philippines, that withholding access to technology increased isolation and created

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[92] *See, e.g.*, JONATHAN MCFADDEN, FRANCESCA CASALINI, TERRY GRIFFIN & JESÚS ANTÓN, OECD, THE DIGITALISATION OF AGRICULTURE: A LITERATURE REVIEW AND EMERGING POLICY ISSUES 9 (2022), https://www.oecd-ilibrary.org/docserver/285cc27d-en.pdf?expires=1719668085&id=id&accname=guest&checksum=035F6DEB7BA9D2BF91FF9551A0901AE1 [https://perma.cc/7NJ6-F4LX] (describing the rise of "smart farming" or e-agriculture); CHARLES ET AL., *supra* note 3, at 9.

[93] CHARLES ET AL., *supra* note 3, at 9 (defining "digital work" as "all work that uses, or is made possible by, information and communication technologies").

[94] *Id.*

[95] *Id.* Although content creators are generally ICT-dependent jobs, some content creators may have advanced technical skills, making their work more ICT-intensive.

[96] *Id.*

[97] LATONERO ET AL., *supra* note 39, at iv.

[98] *Id.* at 1, 8 (quoting NETWORK SOCIETY: FROM KNOWLEDGE TO POLICY 5 (Manuel Castells & Gustavo Cardoso eds., 2005)).

[99] *Id.* at v (noting how technology can shape "both positive and negative social interactions surrounding labor trafficking").

[100] *Id.* at iv.

information gaps, making workers more vulnerable to exploitation.[101] Due to limited empirical research in the field, they ultimately emphasized the need for more research on technology's relationship with labor trafficking to better understand "the isolation, fraud, force, and/or coercion so often at the heart of trafficking cases."[102]

In the United States, there is a significant gap in knowledge about labor trafficking, largely due to the lack of labor trafficking prosecutions and investigations.[103] In 2023, only five of 202 new criminal human trafficking cases charged federally involved labor trafficking.[104] From 2019 to 2023, only 3% of all new federal human trafficking criminal cases involved forced labor.[105] Federal criminal investigations have mirrored these trends with only fifty-five labor trafficking investigations in fiscal year 2022, compared to 613 sex trafficking investigations.[106] The stunning lack of labor trafficking prosecutions has left much unknown about how perpetrators operate.[107]

There are myriad reasons for the low number of labor trafficking investigations and prosecutions in the United States. Enforcement actors frequently prioritize sex trafficking over labor trafficking cases due to historic policing practices.[108] Indeed, some law enforcement agencies equate human trafficking with sex trafficking alone, ignoring labor trafficking cases altogether.[109] Law enforcement agencies often dedicate greater attention and resources to sex trafficking cases, with the perception that these cases are more egregious or de-

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[101] *Id.* at 29.

[102] *Id.* at iv, 8 ("Current labor trafficking practices are enabled and propelled by technology in unique ways that have yet to be fully explored empirically, much less theoretically.").

[103] *See* Smith, *supra* note 21, at 478.

[104] LANE ET AL., *supra* note 21, at 6.

[105] *Id.* at 14.

[106] *2023 Trafficking in Persons Report: United States*, OFF. TO MONITOR AND COMBAT TRAFFICKING IN PERSONS, U.S. DEP'T OF STATE (2023), https://www.state.gov/reports/2023-trafficking-in-persons-report/united-states [https://perma.cc/X5FF-GVEC].

[107] *See, e.g.*, Hila Shamir, *A Labor Paradigm for Human Trafficking*, 60 UCLA L. REV. 76, 79 (2012) ("A central point of criticism is that the implementation of these international and national legal instruments has focused on sex trafficking—the trafficking of women and girls into the sex industry for the purpose of prostitution—while tending to ignore labor trafficking—the trafficking of persons for the purpose of labor exploitation into other labor sectors."); Smith, *supra* note 21, at 478; Kathleen Kim, *The Thirteenth Amendment and Human Trafficking: Lessons & Limitations*, 35 GA. ST. U. L. REV. 1005, 1015 (2020) ("Law enforcement prioritized the investigation and prosecution of sex trafficking rather than labor trafficking . . . ."); PETERS, *supra* note 21, at 158 ("In many cases, service providers perceived law enforcement as favoring sex trafficking and situations involving multiple victims to the exclusion of forced labor or single-victim cases.").

[108] Smith, *supra* note 21, at 498.

[109] *See, e.g.*, PETERS, *supra* note 21, at 158 ("I always get a different response from law enforcement when it's sex trafficking versus labor or a domestic worker, or if it is sex trafficking with just one person involved in it without having a bunch of other people . . . . They don't even respond at all many times.") (quoting a service provider).

serving of attention.[110] Law enforcement and prosecutors frequently receive specialized training about sex-related crimes or sex trafficking, rather than labor trafficking, leaving officers less prepared to address labor trafficking when it arises.[111]

Additionally, unlike with online sex trafficking, law enforcement agencies often have difficulty discerning between labor violations and forced labor.[112] Investigators can struggle to discern between wage theft, labor exploitation, and human trafficking.[113] One federal agent noted, "with labor trafficking, you've got legitimate workers working along with the trafficked folks. They're intermingled. It's hard to tell them apart and a lot of times they may not even know each other's situation."[114] Additionally, law enforcement frequently use stereotypes about the ideal or "iconic" victim to shape who receives legal recognition.[115]

Victimology scholars have shown that victims often fail to report crimes for various reasons, including fear of law enforcement or perpetrators, the lengthy criminal justice process, and the low chances of successful prosecution.[116] Survivors of human trafficking often have complex goals in the aftermath of labor trafficking, prioritizing a range of objectives beyond the criminal prosecution.[117] They may not be convinced that the criminal system has the ability to deliver what they conceive as "justice" and respond to their

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[110] Farrell et al., *supra* note 21, at 44 ("In part, law enforcement agencies seem better prepared to embed sex trafficking cases into ongoing responsibilities because of their perceived overlap with sex crimes."); Shelley Cavalieri, *The Eyes That Blind Us: The Overlooked Phenomenon of Trafficking into the Agricultural Sector*, 31 N. ILL. U. L. REV. 501, 511 (2011) ("These [labor trafficking] cases are less likely to make the headlines and may not attract the kind of press that often accompanies a successful trafficking prosecution.").

[111] Farrell et al., *supra* note 21, at 44 ("In addition to deficits in basic training about labor trafficking crimes, few agencies have assigned specialized investigators or units to develop human trafficking investigations.").

[112] *See, e.g.*, LANE ET AL., *supra* note 24, at 15 ("[L]aw enforcement and the public at large may fail to understand the distinctions between administrative labor violations and forced labor."); Farrell et al., *supra* note 21, at 36, 42 (highlighting challenges that law enforcement faces in distinguishing between labor violations).

[113] Farrell et al., *supra* note 21, at 41.

[114] *Id.* at 42.

[115] Chase Childress et al., *The Half-Built Road; Exploring the Impediments to Justice for Victims of Labor Trafficking*, 10 J. HUM. TRAFFICKING 271, 277 (2024) ("Cultural barriers include law enforcement's unfamiliarity with victims' cultures and reliance on stereotypes about victims in identifying trafficking cases."); Jayashri Srikantiah, *Perfect Victims and Real Survivors: The Iconic Victim in Human Trafficking Law*, 87 B.U. L. REV. 157, 187–91 (2007) (examining how narratives of the "iconic victim" drive misconceptions in immigration and criminal enforcement efforts).

[116] Childress et al., *supra* note 115, at 272.

[117] *Id.* at 280 ("[V]ictims reported multiple needs and goals following exit from the immediate trafficking situation, including safe housing, protection for victims and their families in the U.S. and in their home countries, trauma-informed medical and psychological services, legal representation, and financial support.").

needs.[118] As a result, survivors of labor trafficking often fail to self-identify or report to the police.[119] At the same time, law enforcement remains heavily dependent upon victims to identify cases proactively and successfully prosecute them.[120] Even when victims engage with law enforcement, factors like "role conflict, lack of cohesion, [and] lack of clarity" by law enforcement, can delay the criminal process, both discouraging victims from cooperating and making them vulnerable to reprisals.[121] These and other factors contribute to the widespread under-identification of labor trafficking.[122]

C. Opportunities to Discern Digital Servitude Trends

Despite these challenges, there are new ways to explore how technology intersects with labor trafficking. This Part examines how broad federal definitions of forced labor, the growth of civil federal trafficking cases, and emerging scholarship at the intersection of technology and work can help provide a more nuanced understanding of the role of technology in forced labor cases.

1. Evolving Definition of Forced Labor

Legal remedies addressing involuntary servitude emerged in response to the unique history of chattel slavery in the United States, but the modern legal framework has proven remarkably elastic, slowly evolving to address the modern realities of labor exploitation and involuntary servitude.[123] The term, involuntary servitude, itself became prominent in the nineteenth century with the ratification of the Thirteenth Amendment to the U.S. Constitution.[124] Although the Thirteenth Amendment aimed to address the evils of African slavery, the

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[118] *Id.* at 272.

[119] *See* LANE ET AL., *supra* note 24, at 15 ("[M]any victims of forced labor may fail to recognize that they are being exploited by a trafficker . . . .").

[120] Childress et al., *supra* note 115, at 272 ("[L]aw enforcement primarily relies on victims to disclose their abuse to uncover cases.").

[121] *Id.* at 280.

[122] *See* LANE ET AL., *supra* note 24, at 14 (providing data about the relatively small number of forced labor cases and noting the diverse factors resulting in under-prosecution).

[123] *See* Janie A. Chuang, *Exploitation Creep and the Unmaking of Human Trafficking Law*, 108 AM. J. INT'L L. 609, 611 (2014); Julie Dahlstrom, *Elastic Meaning(s) of Human Trafficking*, 108 CALIF. L. REV. 379, 383 (2020) (exploring how "human trafficking in the United States . . . encompass[es] a surprising array of scenarios"). In contrast with the United States, international law moved away from referencing involuntary or human servitude in general immigration law. *See* Jean Allain, *On the Curious Disappearance of Human Servitude from General International Law*, 1 J. HIST. INT'L L. 303, 304 (2009) (exploring the drafting history of Article 4 of the Universal Declaration of Human Rights and unearthing the unwillingness of States Parties to agree to condemn servitude now reflected in the United Nations and Council of Europe responses to human trafficking).

[124] U.S. CONST. amend. XIII; George Rutherglen, *The Thirteenth Amendment in Legal Theory*, 104 CORNELL L. REV. ONLINE 160, 171 (2019), https://publications.lawschool.cornell.edu/lawreview/2019/09/08/the-thirteenth-amendment-in-legal-theory/ [https://perma.cc/F4PK-R2T8].

Amendment prohibited a wider array of conduct, including "all the vestiges of involuntary slavery."[125] After the enactment of the Thirteenth Amendment, Congress passed enabling statutes prohibiting involuntary servitude and leaving it to federal courts to determine which practices constituted servitude and its vestiges.[126] Eventually, federal courts and Congress breathed life into these provisions, broadening the concept to include both physical violence or restraint and nonviolent coercion.[127]

This evolution, however, was not without conflict among lower courts. Early decisions under the Thirteenth Amendment addressed involuntary servitude without defining it, but two cases, *United States v. Shackney*[128] and *United States v. Mussry*,[129] reached conflicting decisions, leading the U.S. Supreme Court to intervene in 1988.[130] These decisions culminated in the Supreme Court's decision in *United States v. Kozminski*, where the Court was asked to resolve dueling theories about the breadth of the Thirteenth Amendment.[131] In *Kozminski*, the Court defined involuntary servitude narrowly as a condition brought about by the use or threatened use of physical or legal coercion.[132] The Court warned that broader formulations would risk "criminaliz[ing] a broad range of day-to-day activity" and "arbitrary or discriminatory prosecution and conviction," among other consequences.[133] Yet, the Supreme Court did not have the last word.

Instead, Congress intervened to broaden legal understandings of involuntary servitude in the Trafficking Victims Protection Act of 2000.[134] Importantly, Congress provided that involuntary servitude extends to the "condition of servitude through nonviolent coercion."[135] It established the crime of forced labor as reaching psychological coercion, and defined forced labor to include those who provide or obtain "labor" or "services":

> (1) by threats of serious harm to, or physical restraint against, that person or another person;

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[125] ALEXANDER TSESIS, THE THIRTEENTH AMENDMENT AND AMERICAN FREEDOM: A LEGAL HISTORY 104–05 (2004).

[126] Julie Dahlstrom, *Trafficking and the Shallow State*, 12 U.C. IRVINE L. REV. 61, 73 (2021).

[127] *See* Kim, *supra* note 28, at 42.

[128] 333 F.2d 475, 487 (2d Cir. 1964), *modified*, United States v. Kozminski, 487 U.S. 931 (1988).

[129] 726 F.2d 1448, 1455 (9th Cir. 1984), *abrogated by Kozminski*, 487 U.S. 931.

[130] *Kozminski*, 487 U.S. at 931; Jacobus tenBroek, *Thirteenth Amendment to the Constitution of the United States: Consummation to Abolition and Key to the Fourteenth Amendment*, 39 CALIF. L. REV. 171, 179–200 (1951) (examining two interpretations of the Thirteenth Amendment—one narrow and one broad—that characterized early legislative debates).

[131] 487 U.S. at 931.

[132] *Id.* at 944.

[133] *Id.* at 949.

[134] TVPA § 102(b)(12).

[135] *Id.* § 102(b)(13).

> (2) by means of any scheme, plan, or pattern intended to cause the person to believe that, if the person did not perform such labor or services, that person or another person would suffer serious harm or physical restraint; or
> (3) by means of the abuse or threatened abuse of law or the legal process."[136]

Congress did not define "serious harm" until 2008, when it clarified that it should be understood expansively to include:

> [A]ny harm, whether physical or nonphysical, including psychological, financial, or reputational harm, that is sufficiently serious, under all the surrounding circumstances, to compel a reasonable person of the same background and in the same circumstances to perform or to continue performing labor or services in order to avoid incurring that harm.[137]

Importantly, threats of "serious harm" are viewed from the "vantage point of a reasonable person,"[138] taking into account the victim's distinct vulnerabilities.[139]

As a result, federal courts in the United States have recognized more nuanced forms of nonviolent coercion—like threats of financial harm or reputational harm. As Dina Haynes points out, survivors of human trafficking under existing federal anti-trafficking law need not be "chained to a bed in a brothel" to receive legal recognition.[140] Rather, forced labor victims can range from undocumented domestic workers facing immigration threats to college cheerleaders who fear losing their scholarships if they fail to perform.[141] This flexible standard, as Kathleen Kim observed, has allowed courts to "capture[] the

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[136] TVPRA of 2008, 122 Stat. 5044 (codified in scattered sections of 6, 8, 18, 22, 28, 42 U.S.C.).

[137] 18 U.S.C. § 1589(c)(2).

[138] United States v. Dann, 652 F.3d 1160, 1170 (9th Cir. 2011).

[139] *See, e.g.*, *id.*; United States v. Bradley, 390 F.3d 145, 153 (1st Cir. 2004), *judgment vacated on other grounds*, 545 U.S. 1101 (2005); United States v. Djoumessi, 538 F.3d 547, 552 (6th Cir. 2008) ("Fru's 'special vulnerabilities,' complete this grim picture . . . . [S]he was here illegally, she had no money or other means of support and she had no substantial contact with anyone other than these modern-day Thénardiers. These realities made her more susceptible to the Djoumessis' threats of imprisonment and deportation . . . ." (citations omitted)).

[140] *See* Dina Francesca Haynes, *(Not) Found Chained to a Bed in a Brothel: Conceptual, Legal, and Procedural Failures to Fulfill the Promise of the Trafficking Victims Protection Act*, 21 GEO. IMMIGR. L.J. 337, 349 (2007).

[141] *Dann*, 652 F.3d at 1170 (holding that the threat that the victim, who was undocumented with no money, would not receive her wages and would owe a debt was sufficiently serious to constitute forced labor); Richardson v. Nw. Univ., No. 1:21-CV-00522, 2023 WL 6197447, at *6 (N.D. Ill. Sep. 21, 2023) (finding that a University's use of cheerleading contracts, financial incentives, online advertisements, and representations on social media was "enough for a reasonable person in Richardson's shoes—a young adult . . . pursuing an education funded in part by a scholarship—to reasonably feel compelled to continue performing the services").

sociological complexity of modern-day servitude" while taking into account the evolving tactics of perpetrators and the unique vulnerabilities of their victims.[142] This dynamic has permitted federal courts to remain nimble and responsive to the modern realities of forced work.

2. The Growing Tide of Forced Labor Civil Litigation

As interpretations of forced labor have evolved, Congress established a federal civil remedy that opened up new avenues for labor trafficking claims. In 2003, Congress authorized federal civil lawsuits against perpetrators of human trafficking.[143] This development had seismic implications for survivors, who could file civil claims in federal court independent of whether a criminal prosecution commenced.[144] Additionally, plaintiffs had new avenues for civil damages, including compensatory and punitive damages, in federal court.[145] Then, in 2008, Congress permitted plaintiffs to recover against entities that "knowingly benefit[], or attempt[] or conspire[] to benefit, financially or by receiving anything of value from participation in a venture which that person knew or should have known has engaged in" a federal trafficking violation.[146] This change allowed for venture liability, providing new avenues to sue entity defendants, including members of the hotel and hospitality industry, medical personnel, and labor recruiters.[147] Moreover, Congress extended the statutes of limitations for civil claims to ten years, permitting claims to move forward outside the short window that then existed for federal wage claims.[148] These collective developments encouraged plaintiffs to bring civil forced labor claims in federal courts.

As a result, civil trafficking claims have increased dramatically since 2003.[149] From 2003 to 2021, plaintiffs filed 539 federal human trafficking cas-

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[142] Kim, *supra* note 28, at 414.

[143] *See* TVPRA of 2003, § 4(a)(4) ("An individual who is a victim of a violation of section 1589, 1590, or 1591 of this chapter may bring a civil action against the perpetrator in an appropriate district court of the United States and may recover damages and reasonable attorneys fees."). There are also human trafficking civil remedies under state law, but these are beyond the scope of this Article. *See, e.g.*, MASS. GEN. LAWS, ch. 260, § 4D (2018).

[144] *See* TVPRA of 2003, § 4(a)(4).

[145] *Id.*

[146] 18 U.S.C. § 1595(a); *see also* Kathleen Kim, *The Trafficked Worker as Private Attorney General: A Model for Enforcing the Civil Rights of Undocumented Workers*, 2009 U. CHI. LEGAL F. 247, 283 (describing how the 2008 legislation greatly expanded the entities that plaintiffs could sue).

[147] PHELPS, *supra* note 33, at 33. In 2023, Congress later clarified that plaintiffs could bring lawsuits against entities that attempt or conspire to benefit from a trafficking venture. *See id.* at 35.

[148] 18 U.S.C. § 1596. Congress also allowed extraterritorial jurisdiction over certain forced labor claims. See *infra* Part III.D for a discussion of extraterritorial liability.

[149] PHELPS, *supra* note 33, at 6 ("Over the years, the number of federal civil [human trafficking] cases, as well as the scope of those cases, has surged.").

es.[150] Unlike federal criminal prosecutions, the vast majority of civil federal trafficking claims have been labor trafficking cases, with an average of thirty two federal civil cases filed annually since 2016.[151] Civil forced labor complaints provide a window into labor trafficking, showing how the conduct can occur across industries, impact a wide range of workers, and involve a variety of entities.[152] They also make it possible to study in new ways how forced labor connects to technology.

3. Intersection Between Work, Technology, and "Coercive Control"

Over the last two decades, legal scholars also have begun to better understand the intersection between work, technology, and coercion. Work and technology scholars have shown how companies use technology, including "algorithmic management" tools, to monitor and surveil workers more easily.[153] Although these companies seem to provide neutral platforms for work, they can unintentionally enable control, discrimination, and exploitation through their use of algorithms or what some call "algorithmic cruelty."[154] Moreover, feminist scholars have observed how technology can amplify coercive control in intimate partner relationships, with implications in other settings like the workplace.[155] These insights help explain how technology can intersect with forced work.

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[150] *See* MERRICK M. BLACK, HUM. TRAFFICKING LEGAL CTR., USING CIVIL LITIGATION TO COMBAT HUMAN TRAFFICKING: FEDERAL HUMAN TRAFFICKING CIVIL LITIGATION 2021 DATA UPDATE 7 (2022), https://htlegalcenter.org/wp-content/uploads/Civil-Litigation-2021-Data-Update.pdf [https://perma.cc/7YXR-ZKN9].

[151] *Id.* (showing that 381 (70.7%) of the 539 cases involved allegations of labor trafficking).

[152] *Id.* at 8.

[153] *See generally* ALEX ROSENBLAT, UBERLAND: HOW ALGORITHMS ARE REWRITING THE RULES OF WORK 152 (2018) (describing how algorithmic management tools, like the threat of deactivation, shape driver behavior); Rogers, *supra* note 7, at 532 ("More and more jobs are now performed in the shadow of data-gathering devices such as mobile phones, handheld scanners, GPS and other location trackers, and of course computers, which often feed data straight into corporate intranets."); Ajunwa, *supra* note 18, at 377 (contributing to the law-and-political-economy literature by showing how developments in AI risk endangering "worker power and self-determination").

[154] Eric Meyer, *Inadvertent Algorithmic Cruelty*, MEYERWEB (Dec. 24, 2014), https://meyerweb.com/eric/thoughts/2014/12/24/inadvertent-algorithmic-cruelty/ [https://perma.cc/7M6F-T9MV] (coining the term "algorithmic cruelty" to refer to the unanticipated negative consequences of algorithmic systems); *see also* MARY L. GRAY & SIDDHARTH SURI, GHOST WORK 67 (2019).

[155] The term "algorithmic management" was developed by Carnegie Melon researchers to refer to the use of algorithms to manage the behavior of workers. *See* Min Kyung Lee, Daniel Kusbit, Evan Metsky & Laura Dabbish, *Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers*, 33 ASS'N FOR COMPUTING MACH. CONF. ON HUM. FACTORS COMPUTING SYS. 1603 (2015) (on file with ACM Digital Library), https://dl.acm.org/citation.cfm?doid=2702123.2702548 [https://perma.cc/K7HS-CHR5].

The prevalence of ICT has fundamentally transformed how many companies do business, leading to what some call the "gig economy."[156] Although the gig economy offers many benefits, it also has a darker side.[157] Shoshana Zuboff has explored how companies now widely collect and monetize personal data, creating surveillance-based ecosystems across sectors like insurance, health care, education, and finance.[158] As workers have less control over their own personal information, they have less privacy and autonomy in the workplace.[159] Surveillance capitalism can also cause a host of harms, including bias, algorithmic cruelty, and decreased transparency.[160] Moreover, with the fissuring of the workplace, technology companies have subdivided tasks that would have previously constituted a formal job, thus increasing economic precarity.[161] As tasks become smaller and outsourced, platforms negotiate even lower rates and externalize costs to workers. These practices often result in labor arbitrage that makes technology workers vulnerable to wage theft and exploitation.[162]

Technology has also provided employers with access to cheap, effective tools, such as GPS and internet-enabled devices, which can facilitate coercive control in the workplace.[163] Feminist scholars pioneered the concept of "coercive control" to understand the coercive tactics used by perpetrators of intimate partner abuse, and scholars have recently applied these principles to other set-

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[156] There is not a uniform definition of a "gig economy worker," but it often refers to independent contractors, on-call workers, and workers with alternative work arrangements. *See, e.g.*, Dubal, *supra* note 48, at 1940–41.

[157] *See* INT'L LABOUR ORG., REALIZING DECENT WORK IN THE PLATFORM ECONOMY: INTERNATIONAL LABOUR CONFERENCE, 113TH SESSION 62 (2025), https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_909906.pdf [https://perma.cc/YKA6-2ZUB] ("[P]latform work does give rise to risks for some workers who are hidden from scrutiny while working online and in homes.").

[158] SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER 30 (2019).

[159] *Id.* at 20; Hartzog et al., *supra* note 48, at 717 (examining the incidence of "privacy nicks" in our daily lives, including workplaces, and arguing that the "law is complicit in normalizing surveillance").

[160] *See, e.g.*, Seb Murray, *Ratings Systems Amplify Racial Bias on Gig-Economy Platforms*, YALE INSIGHTS (Aug. 14, 2023), https://insights.som.yale.edu/insights/ratings-systems-amplify-racial-bias-on-gig-economy-platforms [https://perma.cc/Y5YA-2WL2] (describing emerging research suggesting that ratings systems on online platforms can increase bias of system users).

[161] Bama Athreya, *Slaves to Technology: Worker Control in the Surveillance Economy*, 15 ANTI-TRAFFICKING REV. 82, 86–87 (2020) (observing how diminishing human relationships in platform work can make workers, especially those from historically marginalized groups, at risk); *see* GRAY & SURI, *supra* note 154, at 67.

[162] Athreya, *supra* note 161, at 86.

[163] *See* Madison Lo, Note, *A Domestic Violence Dystopia: Abuse via the Internet of Things and Remedies Under Current Law*, 109 CALIF. L. REV. 277, 277 (2021) (describing abuse using Internet of Things devices, which are smart, "stand-alone, internet-connected device[s] that can be monitored or controlled from a remote location," weaponized by perpetrators of abuse to surveil, harass, and abuse survivors).

tings, like the workplace.[164] The term, "coercive control," rose to prominence in the anti-domestic violence movement—used to capture the more nuanced tactics of control used by abusers to control victims.[165] In 1982, Susan Schechter was among the first to develop and introduce the concept of "coercive control" in intimate partner relationships.[166] This framework helped to explain how perpetrators can use sexual violence, emotional abuse, and economic dependence to exert power.[167] Schechter's work shifted the anti-violence movement from focusing on isolated physical violence to understanding the broader issue of coercive control.[168]

In the 1980s, the Domestic Abuse Intervention Programs created the Duluth Power and Control Wheel (PCW), showcasing how perpetrators use coercive control tactics.[169] The "spokes" of the wheel illustrate the role of threats, intimidation, economic deprivation, and emotional abuse, and how perpetrators reinforce domination through sexual and physical violence, represented on the outside of the wheel.[170] The wheel itself was a powerful tool to allow victims to label the forms of abuse they experienced and to seek help.[171] Evan Stark further refined the concept of coercive control, as distinct from physical violence.[172] His research showed how subtle tactics, like intimidation, isolation, and economic dependence, can reinforce a culture of male domination.[173] He poignantly explored how the value to perpetrators of coercive control lies in its

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[164] *See, e.g.*, Tamara L. Kuennen, *Analyzing the Impact of Coercion on Domestic Violence Victims: How Much Is Too Much?*, 22 BERKELEY J. GENDER L. & JUST. 2, 2 (2007); SUSAN SCHECHTER, WOMEN AND MALE VIOLENCE: THE VISIONS AND STRUGGLES OF THE BATTERED WOMEN'S MOVEMENT 215 (1982); EVAN STARK, COERCIVE CONTROL: HOW MEN ENTRAP WOMEN IN PERSONAL LIFE 286–91 (2d ed. 2023) (describing the evolution of the concept of coercive control from the 1950s in the context of prisoners of war to encompass intimate partner violence). This literature frequently refers to perpetrators of abuse as "abusers" or "batterers," but this Article prefers to avoid status-based nouns, retaining these words only when they are exact quotations from external sources.

[165] *See, e.g.*, Kuennen, *supra* note 164, at 8.

[166] *Id.* ("Susan Schechter coined the term 'coercive control' . . . .").

[167] *Id.*

[168] SCHECHTER, *supra* note 164, at 17.

[169] ELLEN PENCE & MICHAEL PAYMAR, EDUCATION GROUPS FOR MEN WHO BATTER: THE DULUTH MODEL 3 (1993); *see also* Hannah S. Scott, *Extending the Duluth Model to Workplace Bullying: A Modification and Adaptation of the Workplace Power-Control Wheel*, 66 WORKPLACE HEALTH & SAFETY 444, 445 (2018).

[170] PENCE & PAYMAR, *supra* note 169, at 2. Although the wheel did not use the term "coercive control," it highlighted the range of coercive tactics that perpetrators used. *Id.*

[171] The drafters primarily intended the tool to help survivors of intimate partner violence to identify and name the tactics they experienced. Scott, *supra* note 169, at 445.

[172] STARK, *supra* note 164, at 2.

[173] Coercive control includes tactics of psychological, emotional, financial, and sexual abuse that attack the survivor's autonomy and sense of self, and Stark's research acknowledged how the experiences of survivors varied depending on their race, gender, and socioeconomic status. *Id.* at 293 (explaining how "[i]ts particularity lies in its aim—to usurp and master a partner's unique subjectivity—the scope of its deployment, its individualized and personal dimensions").

pervasive and intensive nature.[174] Perpetrators use tactics of coercive control to reach areas where survivors may seek safety or "safety zones."[175] As a result, survivors can be technically free while still objects of subjugation.[176] This reality allowed perpetrators to overcome spatial and geographic divides and contribute to the feeling of perpetrator omnipotence or omnipresence.[177]

In recent years, scholars have observed how technology plays a growing role in coercive control or "technology-facilitated coercive control."[178] Perpetrators now use a range of tactics, like location tracking, nonconsensual sharing of intimate images, spyware, cyber-stalking, and other methods to track and control victims.[179] Although some of the techniques, like surveillance or stalking, are not new, technology has opened up more efficient and cheaper tools to amplify their reach.[180] With AI and deepfake technology, perpetrators can more easily evade detection and disguise their identities online.[181] Technology also allows perpetrators, often anonymously, to post sensitive information on the

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[174] *Id.* at 297 ("The extensiveness of coercive control is complemented by its intensiveness.").

[175] *Id.* ("As regulation is diffused to sites where victims normally feel safe and independent, like workplace, family gatherings, or the gym, they make ever more desperate attempts to forge moments of autonomy within the sphere of oppression where they can reflect on their situation, contemplate their options, and retain a sense of self—what I term their 'safety zones.'").

[176] *Id.* at 200–01 (noting how subordination of women is made possible through "discriminatory social structures, the enactment of gender, and the micro-dynamics of entrapment in personal life" and key to understanding coercive control).

[177] *Id.* at 298.

[178] Scholars have called this phenomenon a range of terms, including "cyber-violence," "technology-facilitated coercive control," and "digital coercive control." *See generally* Danielle Keats Citron, *The Continued (In)visibility of Cyber Gender Abuse*, 133 YALE L.J.F. 333, 333–36 (2023) (describing forms of "cyber abuse" to include cyber harassment, cyberstalking, and sexual harassment in virtual-reality environments); Lo, *supra* note 163, at 283 (explaining how frequently scholars now use the term "technology-facilitated coercive control" to include the ways that technology provides tool for abuse); Molly Dragiewicz et al., *Technology Facilitated Coercive Control: Domestic Violence and the Competing Roles of Digital Media Platforms*, 18 FEMINIST MEDIA STUD. 609, 609 (2018) (explaining how digital media can amplify patterns of gendered violence); Bridget A. Harris & Delanie Woodlock, *Digital Coercive Control: Insights from Two Landmark Domestic Violence Studies*, 59 BRIT. J. CRIMINOLOGY 530, 530 (2019) (explaining how "technology has been used by domestic violence (DV) perpetrators to abuse and stalk victim/survivors").

[179] *See, e.g.*, Michaela M. Rogers et al., *Technology-Facilitated Abuse in Intimate Relationships: A Scoping Review*, 24 TRAUMA VIOLENCE & ABUSE 2210, 2210 (2022) (defining "technology-facilitated abuse" to include the use of "incessant texting or calling, use of surveillance apps, spyware or other tracking devices as well as the perpetration of abuse over social media and networking platforms").

[180] *See* Lo, *supra* note 163, at 277 (noting that some forms of technology, like the Internet of Things, are cheap and easy for perpetrators to obtain).

[181] *See*, *e.g.*, Bobby Chesney & Danielle Citron, *Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security*, 107 CALIF. L. REV. 1753, 1753 (2019) ("Machine learning techniques are escalating the technology's sophistication, making deep fakes ever more realistic and increasingly resistant to detection.").

internet with a long-lasting impact on victims.[182] As a result, further research has acknowledged the harms of "technology-facilitated coercive control" and the need for new tools to address it.[183]

These insights have powerful implications in other contexts, like in the workplace.[184] Many scholars have begun to apply the concept of coercive control in the context of work and workplace bullying.[185] In 2018, Hannah S. Scott created a PCW for workplace bullying, explored how tactics, like intimidation and emotional abuse, can contribute to workplace harm.[186] Importantly, she described how workers experiencing abusive behavior in the workplace can "suffer physical, emotional, and psychological effects," including symptoms of depression, posttraumatic stress disorder, and feelings of powerlessness, among other issues.[187] These insights, along with those on "technology-facilitated coercive control," deepen understanding about how technology may be used to control and dominate workers in the context of forced labor.

II. UNDERSTANDING DIGITAL SERVITUDE

This Part provides a descriptive account of digital servitude.[188] Based on a self-selected sample of forty-six federal labor trafficking cases from 2018 to

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[182] *See, e.g.*, Diana Freed et al., *Digital Technologies and Intimate Partner Violence: A Qualitative Analysis with Multiple Stakeholders*, 1 PACM ON HUM.-COMPUT. INTERACTION 1, 17 (2017) ("[A]busers frequently set up anonymous email and social media accounts from which they harass the client, create fake Facebook pages containing harmful content, or use software to obscure their phone number when they send abusive text messages.").

[183] *See, e.g.*, NAT'L NETWORK TO END DOMESTIC VIOLENCE SAFETY NET PROJECT, POWER & CONTROL WHEEL: ON TECHNOLOGY & ABUSE, https://safechatsv.org/wp-content/uploads/2016/07/NNEDV_TechPowerControlWheel_Aug08.pdf [https://perma.cc/H2JK-4AVE] (visually representing the unique ways that technology can facilitate coercive control).

[184] Scholars have wrestled with whether and how to apply the theory of "coercive control" outside of the intimate partner violence setting, and some have argued that the framework only applies to gender-based abuse. *See, e.g.*, Delanie Woodlock, Mandy McKenzie, Deborah Western & Bridget Harris, *Technology as a Weapon in Domestic Violence: Responding to Digital Coercive Control*, 73 AUSTRALIAN SOC. WORK 368, 369 (2020) ("This violence is situated within the specific context of coercive and controlling intimate relationships and broader sex-based inequality."); Harris & Woodlock, *supra* note 178, at 532 ("[T]here is evidence that both the type and impact of perpetration are gendered. Failure to acknowledge nuances and divergences in the data results in a distorted image of spaceless violence.").

[185] *See, e.g.*, Debbie L. Duthie, Reinvigorating the Domestic Violence Sector: Systematically Addressing Conflict, Power and Practitioner Turnover (Dec. 18, 2009) (Ph.D. dissertation, Queensland University) (on file with Queensland University of Technology); PATRICIA G. BARNES, SURVIVING BULLIES, QUEEN BEES & PSYCHOPATHS IN THE WORKPLACE (2013) (examining how the workplace can replicate coercive tactics found in abusive relationships).

[186] Scott, *supra* note 169, at 445–47 (creating the Workplace PCW, arguing that workers who assist survivors of domestic violence can engage in patterns of coercion and control with their coworkers in the workplace).

[187] *Id.* at 444.

[188] *See infra* Part II.A–C.

2023, it analyzes how technology presents in forced labor cases.[189] In particular, the findings show how technology intersects with core aspects of the labor trafficking process, including the prohibited *action*, such as recruitment or solicitation, the *means* in terms of coercive tactics, and the *nature* of the "labor" or "services" present.[190]

This Part demonstrates how perpetrators of human trafficking can use online platforms and social media to recruit and communicate with workers. Technology also can provide a means to surveil and track workers. Perpetrators can withhold access to technology, such as phones, the internet, WIFI, or SIM cards, to socially isolate and control workers. In addition, perpetrators can use tactics, like threats to harm a victim's online reputation or share nonconsensual pornography, to compel work. Legal pleadings allege that online platforms can provide an avenue to sell goods made with forced labor. Additionally, the nature of forced labor itself may be changing, occurring in technology-related work.

A. Online Recruitment

Federal pleadings show that e-recruitment plays a role in forced labor cases in the United States. Perpetrators purportedly used online platforms and social media to recruit, groom, and communicate with potential victims of forced labor. As an example, in *Pazderova v. Drzewiecki*, the Defendant allegedly recruited victims of forced labor through Facebook and a popular Polish website called Bazarynka.[191] In another forced labor case, victims testified that the Defendant advertised online for jobs at a local pizzeria, where he coerced undocumented workers to work through threats of violence and deportation.[192] In other cases, perpetrators allegedly used social media to recruit and communicate with potential victims. In *De Britto Bucco v. Western Iowa Tech*

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[189] Please see Appendix A for a description of the research methodology. An Excel file of the self-selected cases is on file with the author and available upon request. It is important to note the limitations of this research. The self-selected sample includes facts alleged in civil and criminal complaints rather than facts proven to be true. For this reason, this Article references these facts as allegations, rather than facts, and uses the terms "reportedly," "allegedly," or "the pleadings allege" to show that these details were alleged, rather than proven to be true.

[190] *See* 18 U.S.C. § 1591 (sex trafficking of children or by force, fraud, or coercion); *id.* § 1589 (forced labor); *id.* § 1584 (involuntary servitude). The Action, Means, Purpose model derives from the *United Nations Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children*, which first defined trafficking in persons internationally. Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime, Nov. 15, 2000, 2237 U.N.T.S. 319.

[191] Complaint at 3, Pazderova v. Drzewiecki, No. 1:23-cv-01617 (E.D.N.Y. Mar. 2, 2023); First Amended Complaint at 4, n.1, Pazderova v. Drzewiecki, No. 1:23-cv-01617 (E.D.N.Y. Apr. 19, 2024) (providing a link to the Facebook job posting that "instructs those applying to contact Defendant Drzewiecki at Dziupla's address, 194 Bedford Avenue in Brooklyn").

[192] Fleischmann Affidavit at 18–19, United States v. Papantoniadis, No. 1:23-mj-05172 (D. Mass. Mar. 15, 2023).

Community College, the pleadings allege that the Defendant recruited Brazilian students through Facebook posts, promising that they would be able to obtain J-1 visas and deceptively claiming that they would gain valuable internship experiences in their fields.[193] When the workers arrived, they were allegedly made to work long days in exploitative conditions at Royal Canin or Tur-Pak Foods.[194] Thus, social media and online postings can provide a means for perpetrators of labor trafficking to reach potential victims and recruit them.

Pleadings also show how perpetrators used social media to collect intimate personal information to manipulate and control victims.[195] In *United States v. Gibbs*, the pleadings allege that the Defendant used Facebook to target and recruit formerly incarcerated women into domestic servitude, forced criminality, and commercial sex.[196] The Defendant purportedly used Facebook to recruit one woman to cook and clean.[197] Prosecutors allege that he learned personal, intimate details through Facebook, including the fact that she was pregnant, wanted by the police, and had substance use issues.[198] Then, the Defendant used these details to manipulate her, promising to "make sure all [her] needs are met" and offering her a place to stay.[199] In another case, the civil complaint asserted that Defendants used Facebook to recruit the Plaintiff to work at Bright Eyes Sanctuary, an animal refuge.[200] The Defendants allegedly recruited the Plaintiff through animal-related Facebook groups, where they learned about her love of cats and her financial difficulties.[201] Knowing she was at risk of being unhoused, they offered her money to convince her to work for them.[202] Critical details learned online purportedly helped the Defendants to lure her into forced labor.

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[193] Complaint & Jury Demand at 9, 11, 13, 15, 16, De Britto Bucco v. W. Iowa Tech Cmty. Coll., No. 5:21-cv-04001 (N.D. Iowa Jan. 11, 2021).

[194] *Id.* at 4, 26–30. According to the complaint, Royal Canin "manufactures high-end pet food" and Tur-Pak "packs and assembles food products." *Id.* at 4.

[195] Thomas Brewster, *On Facebook, DHS Investigates Plot to Enslave Female Prisoners*, FORBES (June 20, 2023), https://www.forbes.com/sites/thomasbrewster/2023/06/20/dhs-investigates-facebook-user-in-alleged-plot-to-enslave-women-prisoners/?sh=10c91e826ffb [https://perma.cc/6A85-YBUS] (quoting National Human Trafficking Resource Center communications director, Rafael Flores Ávalos, who warned that, "[o]nce you share a certain amount of information about your personal life it can make the grooming process easier").

[196] United States' Memorandum in Support of Detention at 18–20, United States v. Gibbs, No. 1:23-cr-00035 (D. Del. May 15, 2023) (explaining how Gibbs used his Facebook account to target and recruit new victims).

[197] *Id.* at 19 (describing when Gibbs recruited one woman who became too scared to show up as requested).

[198] *Id.*

[199] *Id.*

[200] Complaint at 4, Conrad v. Henningsen, No. 1:21-cv-02951 (D. Md. Nov. 17, 2021).

[201] *Id.* at 4.

[202] *Id.* at 6.

B. Technology-Facilitated Coercive Control

In addition to online recruitment, technology has become a tool of coercive control in forced labor cases in the United States. Federal pleadings show that perpetrators of forced labor used technology as a tool of intimidation and control. They purportedly withheld access to technology and cellular phones as a way to increase isolation. They further engaged in cyber harassment to threaten workers. These tactics allowed Defendants to amplify their control over workers.

1. Intimidating, Monitoring, and Stalking Workers

According to federal pleadings, perpetrators of forced labor used technology, including GPS devices and smartphones, to monitor victims' locations, communication, and the workplace. In 2023, federal prosecutors indicted Stavros Papantoniadis for forced labor, alleging that he used cameras linked to his iPhone to monitor workers and make sure that they "never sat down."[203] According to federal pleadings, the Defendant exerted control through "extensive use of video surveillance to monitor and subsequently reprimand victims for what he perceived as non-compliance with his workplace demands."[204] He also used technology to monitor victims even when not physically present at the workplace.[205] When a worker threatened to quit, he allegedly followed and filmed him with his cell phone to make him afraid.[206] Perpetrators also monitored victim communication with family and friends to isolate them socially. In *Santos Garcia v. Vargas Hernandez*, the Defendant allegedly coerced Arturo Santos Garcia to work for an illegal cockfighting operation in a remote location.[207] According to the complaint, the Defendant tracked the victim's phone usage and calls, thus preventing him from engaging with his family or finding friends in the Spanish-speaking community.[208]

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[203] Fleischmann Affidavit, *supra* note 192, at 12 & n.12, 19.

[204] *Id.* at 6.

[205] *Id.* at 12.

[206] *Id.* at 28. ("PAPANTONIADIS pulled his vehicle alongside Victim 7's car and appeared to be filming Victim 7 with his cell phone's camera. PAPANTONIADIS also made a gesture with his hands that looked like two wrists in handcuffs. PAPANTONIADIS's gesture scared Victim 7.").

[207] Complaint for Human Trafficking (Counts 1–9); Labor Violations (Counts 10–18); and Related Common Law Causes of Action (Counts 19–27) at 2, Santos Garcia v. Vargas Hernandez, No. 8:23-cv-00946 (C.D. Cal. May 30, 2023).

[208] *Id.* at 3, 8; *see also* First Amended Complaint for: Human Trafficking (Counts 1–8); Labor Violations (Counts 9–17); and Related Common Law Causes of Action (Counts 18–26) at 34, *Santos Garcia*, No. 8:23-cv-00946 (C.D. Cal. May 30, 2023). According to the complaint, "by monitoring Mr. Santos's cell phone usage, Defendant also isolated him socially, preventing him from speaking with his family, or building relationships with other Spanish speakers." Complaint for Human Trafficking (Counts 1–9); Labor Violations (Counts 10–18); and Related Common Law Causes of Action (Counts 19–27), *supra* note 207, at 9.

Through access to technology, the Defendants also obtained private, personal information that they could use to locate or control workers. In *United States v. Kaur*, the victim testified that the Defendant forced the victim on multiple occasions to use his face to unlock his phone, impermissibly accessing his electronic communications and tracking his communication.[209] In *Saracho v. Huerta*, the Defendant purportedly accessed Ms. Saracho's Facebook and Instagram accounts and used her accounts to message friends and family without her consent.[210] The complaint alleges that he used her Facebook account to contact her mother, threatening that there would be a "big problem" if she did not get in contact "because she was here illegally and could go to prison."[211] In *Nassali v. Kamya*, the complaint alleges that the Defendant took the Plaintiff's phone, accessed her email and messages, and demanded that she translate all her messages from Luganda to English.[212] Through these methods, the Defendants used information gathered online to intimidate and control victims.

Moreover, perpetrators allegedly used GPS devices to monitor the location of workers. In *Hubbard v. Crow*, the Plaintiff alleged that the Defendant turned on the location tracking services in the victim's phone, so he could monitor her whereabouts, and the pleadings allege that he threatened to come to her home if she turned the feature off.[213] According to the complaint, the Defendant also put GPS devices on her car to track her at all times.[214] In *Doe v. Cerqueira*, the pleadings assert that the Defendant was "tracking the Plaintiff's location on her phone" in addition to constantly contacting her by text and phone calls.[215] In *Janse van Rensburg v. Hood*, the Defendants purportedly installed tracking mechanisms to surveil the Plaintiffs' movements whenever they left the farm for short excursions.[216] By monitoring their whereabouts electronically, these Defendants, thus, used technology to control the movement of victims and make it difficult for them to seek help.

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[209] Trial Transcript at 594, United States v. Kaur, No. 3:23-cr-00092 (E.D. Va. Apr. 2, 2024).

[210] Complaint for Labor Trafficking, Wage & Hour Violations, & Retaliation at 19, Saracho v. Huerta, No. 3:21-cv-06957-LB (N.D. Cal. Sep. 8, 2021) ("She was expected to be responsive to all calls and messages.").

[211] *Id.* at 10.

[212] Complaint at 7–8, Nassali v. Kamya, No. 8:19-cv-02444-CBD (D. Md. Aug. 23, 2019).

[213] Second Amended Complaint for Violations of the Trafficking Victims Protection Act & Racketeering Influenced and Corrupt Organizations Act at 42, Hubbard v. Crow, No. 2:22-cv-7957 (C.D. Cal. Nov. 11, 2022) ("Grover also demanded that Hubbard ask permission to use her phone and keep location services turned on so he could track her—if she turned the location services off, Grover would arrive at her home within 20 minutes."). Although the allegations included commercial sex, the Plaintiff alleged that she had to engage in work for the Defendants, including "managerial duties" and acting as a dancer at a cabaret. *Id.* at 41–42.

[214] *Id.* at 50.

[215] Complaint and Demand for Jury Trial, *supra* note 8, at 21.

[216] Complaint at 2, Janse van Rensburg v. Hood, No. 3:19-cv-00008 (E.D. Ark. Jan 14, 2019).

Additionally, pleadings suggest that Defendants used technology to stalk, harass, and remain in constant contact with their victims. In *Conrad v. Henningsen*, the Defendants purportedly recruited the Plaintiff on Facebook.[217] When she tried to leave, the complaint alleges that one Defendant sent her Facebook messages, calls, and texts to check about her whereabouts.[218] In *Saracho v. Huerta*, the Defendant reportedly required that the victim be constantly available through her cell phone.[219] She was so fearful of monitoring of her phone communications that she "threw away her phone because she was fearful that Defendants would use it to track her location."[220] These techniques contributed to tactics of survivor intimidation and control.

2. Isolating Workers

Federal pleadings suggest that perpetrators of forced labor withheld access to technology, such as phone, internet, WIFI, or SIM card access to isolate workers. In 2015, Mark Latonero, Bronwyn Wex, and Meredith Dank posited that perpetrators of labor trafficking could restrict use of mobile phones as a way to isolate workers socially.[221] They pointed to interviews with migrant workers from the Philippines, finding it common for perpetrators of trafficking to limit the workers' contact to their phone, to disrupt their means of communication with the outside world.[222] Due to the lack of federal labor trafficking cases at the time, it was difficult to discern how this trend manifested in the United States.

Labor trafficking pleadings now shed light on how perpetrators of trafficking allegedly withheld or limited access to technology, such as phones, WIFI, SIM cards, data, and laptops, to isolate and control victims. In several cases, Defendants failed to provide the victim with a phone, making communication with friends and family very difficult.[223] In *Cho v. Chu*, the Plaintiff allegedly "was not given a cell phone, she was not allowed to use the home phone, and she did not have any money because the Chus refused to pay her."[224] In

[217] Complaint, *supra* note 200, at 12.

[218] *Id.*

[219] Complaint for Labor Trafficking, Wage and Hour Violations, and Retaliation, *supra* note 210, at 20.

[220] *Id.* at 10.

[221] LATONERO ET AL., *supra* note 39, at 18–34.

[222] *Id.*

[223] *See, e.g.*, Second Amended Complaint at 7, Cho v. Chu, No. 1:21-cv-02297 (S.D.N.Y. Dec. 3, 2021) (alleging that the Plaintiff "was not given a cell phone, she was not allowed to use the home phone, and she did not have any money because the Chus refused to pay her"); Complaint, *supra* note 11, at 3 (alleging that the Defendant took her cell phone in addition to identity documents to isolate her socially from the world); Complaint and Jury Demand at 4, Machhal v. Machhal, No. 1:21-cv-00888 (S.D. Mich. Oct. 15, 2021) ("Among other things, Defendant Machhal did not allow Plaintiff to have a phone.").

[224] Second Amended Complaint, *supra* note 223, at 7.

Iyengar v. Balasubramaniam, pleadings allege that the Defendant took the victim's cell phone to isolate her socially from the world.[225] In *Machhal v. Machhal*, the Defendant allegedly prohibited the Plaintiff from having a phone.[226] In *United States v. Kaur*, the pleadings allege that, although the victim had a cell phone, it lacked a cell phone plan, and the Defendants turned off WIFI at night to prevent the victim from speaking with anyone.[227] The Defendants also purportedly deactivated the data plan[228] occasionally and on several occasions demanded to keep the victim's phone at night.[229] These efforts to restrict technology created barriers for the victims to communicate or seek help.

In other cases, perpetrators of forced labor restricted access to technology in different ways. In *Santos Garcia v. Vargas Hernandez*, Plaintiffs alleged that Defendants made them work at a remote labor camp, where they were denied cell phone service or stable internet access.[230] These methods, according to the Plaintiff, "prevent[ed] him from speaking with his family, or building relationships with other Spanish speakers."[231] In *Parucha v. Magnan*, the Defendant allegedly refused to let the Plaintiff use her mobile phone during the workday, warning her that another worker went to jail when she used her phone.[232] In several other forced labor cases, Defendants purportedly refused to provide the Plaintiffs with a SIM card, so that they could not communicate regularly with family or friends.[233] In *Shagoofa v. Eshaqzi*, the Defendant allegedly prevented the Plaintiff from accessing a SIM card, making her completely dependent on

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[225] Complaint, *supra* note 11, at 3.

[226] Complaint and Jury Demand, *supra* note 223, at 4.

[227] Complaint, *supra* note 11, at 5, 9; *see also* Affidavit in Support of an Application for a Criminal Complaint and Arrest Warrant at 9, United States v. Kaur, No. 3:23-cr-00092 (E.D. Va. Apr. 2, 2024).

[228] Complaint, *supra* note 11, at 5, 9.

[229] *Id.*; Samuel B. Parker, *Teen from India Worked 16-hour Days at Virginia Store Under Threat of Violence*, RICHMOND TIMES-DISPATCH (Jan. 25, 2024), https://newsvirginian.com/news/state-regional/crime-courts/north-chesterfield-harmanpreet-singh-kulbir-kaur-forced-labor-lovely-market-robious-road-bon-air/article_e4a4ccb0-feeb-524b-b411-61cf80aa6520.html [https://perma.cc/6T7F-TMGG].

[230] Complaint for Human Trafficking (Counts 1–9); Labor Violations (Counts 10–18); and Related Common Law Causes of Action (Counts 19–27), *supra* note 207, at 36.

[231] *Id.* at 9.

[232] Complaint at 8, Parucha v. Magnan, No. 1: 22-cv-07294 (S.D.N.Y. Aug. 26, 2022).

[233] *See, e.g.*, Complaint at 8, Masangcay v. Kamenetskaya, No. 1:18-cv-03666 (E.D.N.Y. June 25, 2018) (alleging that the "Defendants repeatedly refused her requests to provide her with a SIM card," making her "limited to using Wi-Fi to contact her family via Facebook Messenger"); Complaint for: 1. Forced Labor in Violation of 18 U.S.C. §§ 1589(a), 1595; 2. Trafficking in Violation of 18 U.S.C. §§ 1590, 1595; 3. Human Trafficking in Violation of Cal. Civ. Code § 52.5; 4. Intentional Infliction of Emotional Distress; 5. Defamation; 6. Declaratory Relief at 18, Shagoofa v. Eshaqzi, No. 8:23-cv-01351 (C.D. Cal. July 27, 2023) (alleging that the Defendant "did not allow her to have a sim card, which meant that Bibi could only contact her family using [the Defendant's] WIFI"); Complaint, *supra* note 11, at 16. (reporting that the Defendant removed her SIM card, deleted her contact list, and only let her use the phone when in his presence).

the perpetrator's WIFI to communicate with her family.[234] These methods of withholding access to technology created a barrier for victims to communicate with friends, family, and others.

Federal pleadings show how withholding access to tablets or devices may also prevent victims from finding legal representation or seeking help. In one case involving the private contractors running immigration detention centers, the private contractor purportedly denied immigrant workers access to the internet and technology, including tablets, which precluded them from seeking legal help or filing medical complaints about the facility.[235] The tablets were one of the workers' only lifelines to communicate with loved ones and support outside of the facility.[236] By prohibiting access to technology, they had little recourse or ways to seek legal or other forms of help.[237]

3. Using Coercion and Threats

According to federal pleadings, perpetrators of forced labor used technology-facilitated threats and intimidation to instill fear. In legal filings, Plaintiffs alleged that perpetrators of forced labor threatened victims with online reputational harm, including posting sexually explicit images or information online to cause reputational damage or psychological abuse. This tactic was particularly prevalent in forced labor cases where there were also claims of sexual violence, illustrating how technology can reinforce sexual violence and control in the workplace. Also, several cases involved victims who were forced to participate in a religious organization.[238]

Federal pleadings show that perpetrators of forced labor threatened to post false information online to exert pressure on workers. In *Baxter v. Miscavige*, the complaint alleges that the Defendants made victims join Sea Organization, a religious order within the Scientology religion, and coerced them

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[234] Complaint for: 1. Forced Labor in Violation of 18 U.S.C. §§ 1589(a), 1595; 2. Trafficking in Violation of 18 U.S.C. §§ 1590, 1595; 3. Human Trafficking in Violation of Cal. Civ. Code § 52.5; 4. Intentional Infliction of Emotional Distress; 5. Defamation; 6. Declaratory Relief, *supra* note 233, at 18.

[235] Complaint at 4, 13, Barahona v. Lasalle Mgmt. Co., LLC, No. 7:23-cv-00024 (M.D. Ga. Mar. 10, 2023) ("Tablet access is thus crucial to Plaintiffs and other detained immigrants at Irwin as it allows them to contact their attorneys, check on the status of their immigration proceedings, and communicate with immigration officials about medical requests and grievances, including with ICE and DHS.").

[236] *Id.* ("Because tablets at Irwin had video cameras, tablets were also an extremely important resource used by Plaintiffs and other detained immigrants to communicate with loved ones and support networks outside of the facility.").

[237] *Id.* at 16.

[238] *See generally* Complaint & Demand for Jury Trial at 1, Baxter, v. Miscavige, No. 8:22-cv-00986 (M.D. Fla. Apr. 28, 2022); Complaint & Affidavit in Support of Arrest Warrant at 4, United States v. Raniere, No. 1:18-cr-00204 (E.D.N.Y. Feb. 14, 2018); *Martin* Complaint, *supra* note 11, at 3; Complaint, *supra* note 10, at 1.

to work unpaid aboard a cruise ship.[239] To instill fear, the Defendants purportedly threatened to create defamatory websites about any defectors who left the organization.[240] According to the pleadings, when some members refused to work, the Defendants made good on their promises, creating websites accusing defectors of lying.[241] One Plaintiff, Valeska Paris, described how the website had profound impact on her, causing her to live in "continual fear that the website could damage job prospects and personal relationships"[242] and making her feel that she could never escape the Defendants.[243] Thus, the fear of online defamation was a powerful tool to compel work.

Perpetrators of forced labor solicited collateral, in the form of sexually explicit images or information, which they threatened to share online.[244] In *Iyengar v. Balasubramaniam*, the Defendant allegedly took sexually explicit images and videos of the Plaintiff without her consent.[245] According to the pleadings, he then retained the images as an "insurance policy" to ensure that she did not report him to law enforcement.[246] In *United States v. Raniere*, the Defendant purportedly took similar collateral, including sexually explicit images or videos, which he threatened to share if the victims left the organization he founded, called NXIXM, or failed to comply with his demands to work and provide sexual services.[247] In *Martin v. La Luz Del Mundo*, the Defendant purportedly threatened to engage in a "smear campaign" on social media if they threatened to leave the La Luz Del Mundo, a religious organization compelling work and sexual abuse.[248] Eventually, the organization purportedly distributed images of the plaintiff and her family on social media with veiled threats.[249] These tactics of cyber harassment were a mechanism to compel work and ensure the victims' compliance.

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[239] Complaint & Demand for Jury Trial, *supra* note 238, at 1–35.

[240] *Id.* at 34.

[241] *Id.*

[242] *Id.* at 77–78.

[243] *Id.* (alleging that "[t]he inescapable presence of the website . . . constantly served to remind Valeska of the potential for even more serious forms of retaliation if she were ever to violate Defendant's absolute prohibition on initiating any criminal or civil legal action against them").

[244] Complaint and Affidavit in Support of Arrest Warrant, *supra* note 238, at 7.

[245] Complaint, *supra* note 11, at 2, 10, 19–20.

[246] *Id.* ("When Ms. Iyengar begged him to delete the photographs and video, Mr. Balu laughed at her and told her he was keeping them 'as an insurance policy so she would not go to the police.'").

[247] Complaint and Affidavit in Support of Arrest Warrant, *supra* note 238, at 7 ("Collateral consisted of material or information that the prospective slave would not want revealed because it would be ruinous to the prospective slave herself and/or someone close to her."); *see also* Complaint, *supra* note 10, at 29–30, 151.

[248] *Martin* Complaint, *supra* note 11, at 25. The Defendant allegedly made good on these threats, beginning a "terrible smear campaign" including online threats. *Id.* at 44.

[249] *Id.*

C. Technology-related Work

Federal pleadings demonstrate how forced labor can occur in technology-related work. ICT-intensive jobs, including software engineering or website development, can be sites of forced labor. For example, in *Delos Reyes v. Abundant Nursing*, the defendants purportedly recruited Mr. Delos Reyes to work for Marathon Health, a healthcare company, to develop websites and engage in computer-related work.[250] Once he arrived, the Defendant developed a website, helped with a personal e-commerce website, sold electronic books, and acted as a web designer.[251] Even though he often worked remotely and could leave the workplace, the pleadings allege that he lived in fear due to threats of deportation and his growing debt.[252]Forced labor can also occur in ICT-enhanced jobs, where technology is only a small part of their job. In *Pazderova v. Drzewiecki*, the Defendant purportedly recruited the victim to work as a server at the Dziupla Restaurant.[253] Once she arrived, she was made to promote the restaurant on social media, among other duties.[254] In *Samandarova v. Hookah Exotix*, the Defendants allegedly recruited the Plaintiff to work as a server at the Miami Sky Yard.[255] As a part of her work, she was required to grow their social media and online presence, including through blog posts in multiple languages.[256] The pleadings make note that the Defendants encouraged her to create a profile on Tinder, a social media dating site, to lure men to the business.[257] These were some of the types of technology-related work that victims were made to perform.

Defendants also purportedly used social media platforms to sell goods made by forced labor online. In *United States v. Gibbs*, pleadings allege that Clifton Gibbs and Brooke Waters made victims steal or "boost" goods from local stores and then resold items on websites like Facebook Marketplace and eBay.[258] Indeed, federal prosecutors alleged that Gibbs and Waters developed this model through years of online sex trafficking, "switch[ing] their tactics to forced labor, all the while maintaining their predatory recruitment of vulnerable victims that they could easily control."[259] In *Johnson v. Town of Greece*, Bill Reilich purportedly coerced the victim to work for his Hot Rod Ranch,

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[250] Complaint at 7–8, 13, Delos Reyes v. Abundant Nursing, Inc., No. 1:19-cv-02596 (E.D.N.Y. May 2, 2019).

[251] *Id.* at 13.

[252] *Id.* at 16.

[253] Complaint, *supra* note 191, at 3.

[254] *Id.* at 5, 14.

[255] Complaint at 3, Samandarova v. Hookah Exotix LLC, No. 1:22-cv-22787 (Sep. 1, 2022).

[256] *Id.*

[257] *Id.* at 2.

[258] United States' Memorandum in Support of Detention at 11, United States v. Gibbs, No. 1:23-cr-00035 (D. Del. May 15, 2023).

[259] *Id.* at 12.

which "repairs and upgrades used vehicles and sells them for profit,"[260] and allegedly sold the vehicles on online "platforms like Facebook Marketplace for a significant profit."[261] These cases, although a relatively small number, highlight that forced labor content may be found online.

III. A WAY FORWARD

This Part argues that federal anti-trafficking statutes with modest interventions can better take into account the role of technology in forced labor. Section A of this Part explores the need for more research to understand the nature and prevalence of digital servitude,[262] and Section B examines how online recruitment can open up new avenues to document labor trafficking and better identify trends in cases.[263] Section C of this Part looks at how federal courts can use the existing doctrine of "serious harm" to recognize the role of technology-facilitated coercive control in forced labor cases.[264] Section D of this Part discusses how civil trafficking remedies can provide workers with greater remedies and avenues to call out companies that knowingly benefit from the conduct.[265] Section D also briefly discusses barriers to accountability, such as Section 230 of the Communications Decency Act and the *Doe v. Apple* ruling, which limit potential recovery involving online platforms and trafficking conduct abroad.[266]

A. Greater Research to Understand Digital Servitude

Forced labor pleadings provide new evidence that labor trafficking can manifest in technology-related work, and continued research is necessary to understand its full scope and prevalence. This Article begins to chart out the ways in which technology can facilitate forced labor, but there is much yet to learn about how digital servitude manifests and its prevalence. Continued study of federal forced labor pleadings is essential, and it will be important to study cases in other jurisdictions, including state human trafficking cases and internationally, for a more comprehensive picture of the industries where digital servitude is present and forms of technology-related work. Also, given that a small percentage of survivors initiate legal proceedings, qualitative inter-

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[260] Complaint, *supra* note 12, at 16; Jackie Napier & WHAM Staff, *Town of Greece, Supervisor Bill Reilich Sued Over Allegations of Forced, Unpaid Labor at Side Business*, WHAM (Aug. 9, 2023), https://13wham.com/news/local/greece-town-supervisor-bill-reilich-bobby-johnson-michelle-marini-the-ranch-lawsuit-side-business-labor-sweden-brockport-swamp-road [https://perma.cc/99NF-7LQA].

[261] Complaint, *supra* note 12, at 6.

[262] *See infra* notes 267–281 and accompanying text.

[263] *See infra* notes 282–293 and accompanying text.

[264] *See infra* notes 294–308 and accompanying text.

[265] *See infra* notes 309–332 and accompanying text.

[266] *See infra* notes 309–332 and accompanying text.

views with survivors can shed light on where forced labor can be found and raise awareness about who is impacted.[267] As Congress authorized greater research and funding to understand the nature of online sex trafficking, more empirical research is necessary to understand where forced labor is present in the digital economy.

Cases in other jurisdictions will further elucidate how technology can facilitate forced labor. Recent news reports showcase some of the emerging ways that technology workers can be vulnerable to forced labor. In 2022, Time Magazine showcased the exploitation of Facebook content moderators in Kenya by Facebook's parent company, Meta, and a Kenyan company, Sama.[268] Workers eventually filed an anti-trafficking lawsuit, alleging that the companies recruited content moderators to review hundreds of violent, graphic, and traumatizing videos, paying them as low as 1.50 per hour and punishing them for engaging in organizing efforts.[269] In 2023, a Kenyan judge allowed the trafficking lawsuit to move forward—the first time that Meta has been "significantly subjected to a court of law in the global south."[270] The case, still pending, provides a window into how technology workers may be survivors of human trafficking.

Allegations of forced labor have also emerged in the online scamming industry abroad.[271] In 2023, thousands of people were reportedly forced to work in Cambodia, Laos, and Myanmar in online scamming compounds on cryptocurrency, fraudulent dating, and illegal gambling websites.[272] Through job ads on social media platforms, like QQ, WeChat, and WhatsApp, the perpetrators recruited victims from more than 20 countries, including Bangladesh, Brazil, China, and the United States.[273] Many of the victims were well-educated and

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[267] To promote awareness, Appendix B provides a PCW for technology-facilitated labor trafficking. The PCW outlines tactics of power and control that perpetrators of labor trafficking may use involving technology informed by the cases outlined in this Article.

[268] Billy Perrigo, *Inside Facebook's African Sweatshop*, TIME (Feb. 17, 2022), https://time.com/6147458/facebook-africa-content-moderation-employee-treatment/ [https://perma.cc/CH4Y-XGJD].

[269] Billy Perrigo, *Facebook Faces New Lawsuit Alleging Human Trafficking and Union-Busting in Kenya*, TIME (May 11, 2022), https://time.com/6175026/facebook-sama-kenya-lawsuit/ [https://perma.cc/AS69-MYN6].

[270] Billy Perrigo, *Meta Fails Attempt to Dodge a Worker Exploitation Lawsuit in Kenya*, TIME (Feb. 6, 2023), https://time.com/6253180/meta-kenya-lawsuit-motaung/ [https://perma.cc/BLL7-MBLG].

[271] In 2023, the U.S. Office to Monitor and Combat Trafficking in Persons observed how perpetrators of trafficking, in light of global dynamics resulting from the COVID-19 pandemic, have become a "multi-billion dollar industry" involving the "forced criminality in cyber scam operations." OFF. TO MONITOR & COMBAT TRAFFICKING IN PERSONS, DEP'T OF STATE, HUMAN TRAFFICKING AND CYBER SCAM OPERATIONS 1 (2023), https://www.state.gov/wp-content/uploads/2023/12/Human-Trafficking-and-Cyber-Scam-Operations.pdf [https://perma.cc/Z8PC-SKFL].

[272] *See, e.g.*, Tessa Wong, Bui Thu & Lok Lee, *Cambodia Scams: Lured and Trapped into Slavery in South East Asia*, BBC NEWS (Sep. 20, 2022), https://www.bbc.com/news/world-asia-62792875 [https://perma.cc/DB9C-7USZ].

[273] *See id.*; MINA CHIANG & VALENTINA CASULLI, HUM. RSCH. CONSULTANCY, GUIDANCE ON RESPONDING TO VICTIMS IN FORCED SCAM LABOR 4 (2023), https://humanity-consultancy.com/wp-

targeted due to their backgrounds in customer service, information technology, and computer programming, then made to engage in criminal activity, such as fraud scams, data harvesting and money laundering.[274] In 2022, Interpol announced that online scamming compounds were "escalating rapidly, [and] taking on a new global dimension."[275] This news comes as policy makers fear that improved AI tools will allow online scamming to have a broader reach.[276]

Moreover, state and international criminal pleadings illustrate how content creators can also be victims of forced labor. In 2022, the Manhattan District Attorney's Office indicted Jonathan Ruiz on forced labor and sex trafficking charges for allegedly using violence and other tactics to force a victim to post content on OnlyFans.[277] The pleadings allege that Ruiz and his partner, Charline Santiago, beat their victims, withheld their identity documents, and threatened them with a gun to force them to comply with their demands.[278] The Defendants purportedly made at least one woman create content on OnlyFans, where she had to work to upload images for profit.[279] In another case, British prosecutors confirmed that Andrew Tate, a controversial American-British social media personality, will face charges of rape, assault, and human trafficking

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content/uploads/2023/04/HRC-Briefing-Guidance-on-Responding-to-Victims-in-Forced-Scam-Labour.pdf [https://perma.cc/8GVL-9P6H].

[274] U.S. DEP'T STATE, *supra* note 2, at 63; Lauren Burke Preputnik, Julia Dickson, Aly Senko & Andrew Friedman, *Cyber Scamming Goes Global: Sourcing Forced Labor for Fraud Factories*, CSIS (Dec. 12, 2024), https://www.csis.org/analysis/cyber-scamming-goes-global-sourcing-forced-labor-fraud-factories [https://perma.cc/DW45-AS25].

[275] *INTERPOL Issues Global Warning on Human-Trafficking Fueled Fraud*, INTERPOL (June 7, 2023), https://www.interpol.int/en/News-and-Events/News/2023/INTERPOL-issues-global-warning-on-human-trafficking-fueled-fraud [https://perma.cc/2ABS-SZ5T]; *see also* U.S. DEP'T OF STATE, 2023 TRAFFICKING IN PERSONS REPORT (2023), https://www.state.gov/reports/2023-trafficking-in-persons-report [https://perma.cc/NG3J-GG93] ("Transnational organized criminal groups are exploiting the vulnerabilities laid bare by the COVID-19 pandemic, from social isolation to increased presence online, to coerce workers from around the world to conduct those scams, while also defrauding untold more.").

[276] *See, e.g.*, JOE BURTON, ARDI JANJEVA, SIMON MOSELEY & ALICE, THE ALAN TURING INST. CTR. FOR EMERGING TECH. & SEC., AI AND SERIOUS ONLINE CRIME 4 (2025), https://cetas.turing.ac.uk/sites/default/files/2025-03/cetas_research_report_-_ai_and_serious_online_crime_0.pdf [https://perma.cc/3JDE-HG3U] (finding "considerable evidence emerging of a substantial acceleration in AI-enabled crime" and noting how AI can allow individuals to automate and "rapidly scale" conduct, including romance scams).

[277] Press Release, Manhattan District Attorney's Office, D.A. Bragg Announces Charges in Sex Trafficking and Labor Trafficking Conspiracy That Spanned Six States (June 29, 2022), https://manhattanda.org/d-a-bragg-announces-charges-in-sex-trafficking-and-labor-trafficking-conspiracy-that-spanned-six-states/ [https://perma.cc/B8RR-FDCW].

[278] *Id*.

[279] *Charline Santiago, Jonathan Ruiz Charged in Multi-State Sex Trafficking Ring*, CBS NEWS (June 29, 2022), https://www.cbsnews.com/newyork/news/charline-santiago-jonathan-ruiz-sex-trafficking-ring-new-york/ [https://perma.cc/E4BW-QN7J]. Ruiz pleaded guilty of labor trafficking and other charges in April 2025. Press Release, Manhattan District Attorney's Office, D.A. Bragg Announces Pleas in Sex Trafficking Operation (Apr. 29, 2025), https://manhattanda.org/d-a-bragg-announces-pleas-in-sex-trafficking-operation/ [https://perma.cc/U57K-CDA8].

in Britain.[280] Leaked court documents alleged that one woman had to be "live on TikTok for 12 hours with only a five-minute break," and feared that the group would publish intimate videos or photos online if she tried to quit.[281] Understanding these and other cases will be critical to developing an effective approach to address digital servitude.

B. Detecting and Documenting Online Recruitment

As researchers better understand digital servitude, technology can assist investigators and prosecutors to better document trends and strengthen legal cases.[282] Historically, forced labor has been difficult to identify because it occurred behind closed doors, hidden from the public eye. Victims frequently found jobs through word-of-mouth or job recruitment agencies, so it was difficult to track potential perpetrators on the internet or using technology. Now, as forced labor content moves online, it is more visible, providing new avenues to document labor trafficking and proactively identify labor trafficking trends.

Forced labor content online can provide valuable information to investigators and prosecutors about forced labor. For example, in *United States v. Gibbs*, the Defendants allegedly relied heavily on Facebook to recruit and control women to engage in labor and sex trafficking, and prosecutors subpoenaed large troves of data from Facebook to build their case. [283] Initial disclosures provided officials with 89,000 pages of data from over four years of Facebook use, which they used to show how the Defendants lured women into the traf-

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[280] Willem Marx, *Tate Brothers Face Rape and Trafficking Charges in U.K.*, NPR (May 28, 2025), https://www.npr.org/2025/05/28/nx-s1-5414499/tate-brothers-rape-trafficking-assault-uk [https://perma.cc/5QZ6-FVYW].

[281] Lucy Williamson, *Andrew Tate: Influencer Threatened Workers with Violence, Victim Claims*, BBC (Feb. 3, 2023), https://www.bbc.com/news/world-europe-64518526 [https://perma.cc/8N6Z-TPSS]. According to a leaked court document viewed by the BBC, one woman alleged that the Defendants made her work on social media, earning at least £9,000 per month, and threatened to harm her if she failed to comply. *Id.*

[282] Researchers have explored how technology can also provide new opportunities to document and disrupt human trafficking. *See, e.g.*, Jennifer Musto, Mitali Thakor & Borislav Gerasimov, *Editorial: Between Hope and Hype: Critical Evaluations of Technology's Role in Anti-Trafficking*, 14 ANTI-TRAFFICKING REV. 1, 1 (2020) (describing how technology has emerged as a potential solution to human trafficking and critiquing these interventions as insufficient to solve the complex causes of human trafficking); Berg et al., *supra* note 39, at 50 (detailing the growth of technological tools to address worker conditions and the need for "empirical, critical, worker-centered analyses of these new tools"); *Example in Action: Technology to Engage Migrant Workers*, U.S. DEP'T OF LAB., https://www.dol.gov/agencies/ilab/comply-chain/steps-to-a-social-compliance-system/step-2-assess-risks-and-impacts/example-in-action-technology-to-engage-migrant-workers [https://perma.cc/X4AM-NPS5] (providing examples of technology interventions in the forced labor context).

[283] United States' Memorandum in Support of Detention, *supra* note 258, at 7–8, 11 (describing how the Defendant reportedly reached out to victims via Facebook and made them steal goods from local stores and engage in "labor, including manual labor, panhandling, childcare, house cleaning, and trash burning"); Brewster, *supra* note 195.

ficking scheme.[284] The Facebook communications demonstrated how Gibbs gained information, and in May 2025, a federal jury found him guilty of five counts of forced labor and seven counts of sex trafficking after a seven-day trial.[285] As in the *Gibbs* case, technology can provide new ways to prove essential elements of a trafficking claim. It can help investigators proactively identify other witnesses and corroborate the testimony of the victims through evidence online.

Additionally, online recruitment evidence can help researchers gain deeper insights into the methods employed by labor trafficking perpetrators. In the sex trafficking context, researchers have gleaned much from federal pleadings. In 2023, researchers discerned that perpetrators of sex trafficking used the internet to advertise 60% of victims of sex trafficking in federal cases.[286] They identified the primary websites used by perpetrators to recruit victims.[287] They identified the common payment platforms and the tactics used by perpetrators of online sex trafficking.[288] Thus, legal pleadings can provide researchers with new ways to understand labor trafficking trends.

Investigators can use this data not only to investigate cases but also to disrupt forced labor. Legal and technology scholars have identified considerable risks of deploying technology to combat trafficking, including concerns about bias and racial stereotyping, amplifying surveillance of marginalized groups, and the accuracy of nascent technologies.[289] Yet, if deployed carefully, technology can play an important role in disrupting and combating digital servitude. As an example, state labor trafficking pleadings filed in the civil lawsuit in *Kan v. Lin* show that the Defendants posted advertisements on WeChat, China's most popular social media app, to recruit vulnerable

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[284] Brewster, *supra* note 195.

[285] Press Release, U.S. Dep't of Just., Delaware Man Convicted of Sex Trafficking and Forced Labor (May 13, 2025) (on file with Department of Justice) https://www.justice.gov/opa/pr/delaware-man-convicted-sex-trafficking-and-forced-labor [https://perma.cc/DS6J-ZD49].

[286] LANE ET AL., *supra* note 21, at 56. This data only represents the cases where the form of recruitment was mentioned.

[287] *Id.* at 3 (noting that Snapchat, Facebook, and Instagram were the top three online platforms used to recruit victims in 2023).

[288] *See id.* at 3, 41, 95, 139.

[289] *See, e.g.*, Erin Kilbride, *Using AI to Fight Trafficking Is Dangerous: Language Models Built on Stereotypes Will Exacerbate Harm*, HUM. RTS. WATCH (July 1, 2024), https://www.hrw.org/news/2024/07/01/using-ai-fight-trafficking-dangerous [https://perma.cc/K9LY-EC88] (expressing concerns about using an algorithm to detect criminal conduct because it may result in discrimination against those most marginalized); Sabra Boyd, *How Big Tech and AI Are Putting Trafficking Survivors at Risk*, OPEN DEMOCRACY (June 14, 2023), https://www.opendemocracy.net/en/beyond-trafficking-and-slavery/how-big-tech-and-ai-are-putting-trafficking-survivors-at-risk/ [https://perma.cc/Q34X-AB6X] (warning that "trafficking data is both limited and notoriously inaccurate" and "bad data means bad learning").

Chinese workers in the United States.[290] One victim, Chungui Xiong, saw an ad on WeChat, advertising work on a "New Mexico Farm" and promising to pay her $200 per day.[291] Using such false ads online, the Defendants allegedly lured more than 1,000 Chinese workers and then forced them to work in grueling conditions in marijuana cultivation facilities.[292] When investigators found the victims, they were, according to an anti-trafficking advocate, "just skin and bones," having been "essentially trapped on the farms with no way to leave."[293] If investigators had proactively identified the job recruitment pattern, they could have deployed technology to identify potential victims. Moreover, they could use machine learning and AI to learn more about the trafficking scheme and recruitment tactics. Therefore, with careful implementation, technology has the potential to enhance proactive identification and disruption of labor trafficking schemes, ultimately aiming to protect vulnerable populations from exploitation.

C. "Serious Harm" Caused by Technology-Facilitated Coercive Control

Courts have a significant role to play in recognizing digital servitude. The federal forced labor statute provides an existing framework for courts to interpret "serious harm" to include the harms that flow from technology-facilitated coercive control in the workplace.[294] Forced labor law already prohibits those who engage in "threats of serious harm to," or "physical restraint [against] that person or another person" or "any scheme, plan, or pattern intended to cause the person to believe that, if the person did not perform such labor or services, that person or another person would suffer serious harm or physical re-

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[290] Complaint at 21, Kan v. Lin, No. D-101-cv-2023-02377 (1st Judicial Dist. Ct. Santa Fe Cnty. Sep. 27, 2023).

[291] *Id.*

[292] *Id.* at 1–3, 21, 121, 160; s*ee also* OFF. OF CMTY. ORIENTED POLICING SERVS., INST. FOR INTERGOVERNMENTAL RSCH., RECENT LABOR TRAFFICKING CASES AND TRENDS 7 (2023), https://portal.cops.usdoj.gov/resourcecenter/content.ashx/cops-r1131-pub.pdf [https://perma.cc/7MG7-CL8H]; Legu Zhang, *Chinese Workers Turn to US Marijuana Industry as Service Jobs Dry Up*, VOICE OF AM. (Jan. 23, 2021), https://3.67.37.141/usa/chinese-workers-turn-us-marijuana-industry-service-jobs-dry [https://perma.cc/EK22-XKYW].

[293] Zhang, *supra* note 292. Technology also made it more difficult for workers to exit exploitation because they faced "stress, anxiety, and shame" as news and their images circulated on WeChat following the trafficking intervention. Complaint, *supra* note 290, at 30.

[294] 18 U.S.C. § 1589(c)(2) (defining "serious harm" in the context of forced labor to include "any harm, whether physical or nonphysical, including psychological, financial, or reputational harm, that is sufficiently serious, under all the surrounding circumstances, to compel a reasonable person of the same background and in the same circumstances to perform or to continue performing labor or services in order to avoid incurring that harm").

straint."[295] "Serious harm" is defined broadly to include psychological, financial, and reputational harm. This framework permits courts to consider a victim's unique vulnerabilities when understanding the serious harm they face.[296] Thus, courts are well-positioned to recognize both the harms that flow from technology-facilitated coercion and the unique vulnerabilities that an individual may have associated with technology.[297]

Theories of coercion, present across disciplines, help to explain how one actor can dominate or "diminish the free will of another" without using physical violence, and these insights are helpful when considering the role of technology in the forced labor context.[298] Although forced labor can involve physical locks, it often involves invisible chains—more subtle forms of coercion—that are effective tools to compel work.[299] Courts have increasingly recognized how coercive tactics, such as threats of deportation or reputational harm, can tether a worker to their employer, despite the worker's ability to come and go physically. Just like these tactics, technology-facilitated coercive control, including threats to release intimate pictures online or using technology to surveil a victim, can reduce the autonomy and choices of workers. They also can affirmatively inflict emotional, economic, or reputational harm. Indeed, in some cases, the very invisibility of the tactics makes them even more insidious because it means that they are, by design, difficult to identify and disrupt.

Technology-facilitated coercive control can have long-term serious consequences for victims, including reputational, economic, and emotional harm. Danielle Citron and others have written powerfully about the pervasive psychological impact of cyber harassment.[300] Tactics of technology-facilitated control often cause recurring emotional distress.[301] Moreover, privacy violations, like surveilling online behavior or doxing, can have lasting reputational and emotional impacts.[302] Identity theft and reputational damage online can destroy family and work relationships, exacting long-term psychological con-

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[295] William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008, Pub. L. No. 110-147, 122 Stat. 5044 (codified in scattered sections of 6, 8, 18, 22, 28, 42 U.S.C.). The legislative conference report clarified that "statutes on involuntary servitude have been narrowly construed, in the absence of a definition by Congress, to exclude certain cases in which persons are held in a condition of servitude by nonviolent coercion." Kim, *supra* note 28, at 439 (citing H.R. REP. NO. 106-939, at 89 (2000) (Conf. Rep.)).

[296] 18 U.S.C. § 1589(c)(2).

[297] Kim, *supra* note 28, at 457.

[298] *Id.* at 411.

[299] *Id.* at 411–12.

[300] Danielle Keats Citron, *Cyber Civil Rights*, 89 B.U. L. REV. 61, 66 (2009).

[301] Danielle Keats Citron & Daniel J. Solove, *Privacy Harms*, 102 B.U. L. REV. 793, 841 (2022). Danielle Citron and Daniel Solove have explored how fear, one impact of cyber harassment, can have devastating psychological impacts. *Id.* at 841–42 (describing the deep emotional impact of cyber harassment on one well-known tech blogger).

[302] Citron & Solove, *supra* note 301, at 842.

sequences.[303] Threatening to share information or images online can impact victims' ability to find or keep work.[304] Additionally, online harassment and abuse can result in reputational harm.[305] Threatening to share false or intimate information online can easily impact one's reputation permanently. In one forced labor case, pleadings alleged that the victim was so terrified that the online harassment would impact her reputation that, "[t]he inescapable presence of the website [created by the defendants] . . . constantly served to remind" her of reprisals she might face.[306] Understanding the harmful, long-lasting effects of technology-facilitated coercive control is essential for addressing and preventing these abuses effectively.

In forced labor cases, courts must also consider the unique vulnerabilities of workers who experience technology-facilitated coercive control. Workers from historically marginalized groups, such as women and people of color, are often particularly at risk to forms of cyber harassment like nonconsensual pornography. Studies have shown that they are more likely to experience online discrimination and online harassment.[307] Also, some workers may be particularly dependent on technology to communicate with the outside world or provide for themselves. For example, immigrant workers with only one device to contact family and friends abroad may be particularly vulnerable to tactics such as disrupting WIFI access, taking a victim's SIM card, or withholding their device altogether. Alternatively, workers such as content creators who depend on regular internet access for their livelihood could face particular challenges if an employer threatens to cut off their internet connection or take their phones. Overall, courts must carefully evaluate the worker's access to and dependence on technology to determine whether they face serious harm.

Moreover, it is essential for the forced labor statute to reflect the modern realities of servitude, including how technology can facilitate coercion. Legal scholars have noted that legal frameworks have to evolve to take into

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[303] *Id.*

[304] In one forced labor case, for example, the Defendants allegedly threatened to create defamatory websites, causing the victim to live in "continual fear" that they would "damage her job prospects," making it hard to work ever again. Complaint and Demand for Jury Trial, *supra* note 238, at 77.

[305] DANIEL J. SOLOVE, UNDERSTANDING PRIVACY 175 (2008). The right to a reputation has long been cognizable, recognizing that a person's right to their good name is ingrained in "our basic concept of the essential dignity and worth of every human being." Rosenblatt v. Baer, 383 U.S. 75, 92 (1966) (Stewart, J., concurring); Citron & Solove, *supra* note 301, at 837–38.

[306] Complaint and Demand for Jury Trial, *supra* note 238, at 77–78.

[307] *See, e.g.*, Citron, *supra* note 300, at 67 ("[A] cyber civil rights agenda must be sure to highlight the harms inflicted on traditionally subjugated groups, because online civil rights abuses typically affect members of these traditionally subjugated groups disproportionately, but not universally."); Spandana Singh & Dillon Roseen, *Online, Vulnerable Groups Only Become More Vulnerable*, NEW AM. (Dec. 13, 2018), https://www.newamerica.org/weekly/online-vulnerable-groups-only-become-more-vulnerable/ [https://perma.cc/SN5D-F2AR] (explaining that statistical evidence "shed[s] light on the role that race, ethnicity, gender and sexual identity, age, and religion routinely play in exacerbating cases of online abuse and harassment").

account the role of technology. As Kate Klonick observed, there is a need for "coherent and consistent framework[s] for defining" technology-related harms to "ensure that any laws written to protect people from them will be narrowly tailored and nuanced enough to allow for an ever-changing online society."[308] As technology changes the nature of forced labor, legal frameworks too must adapt to ensure courts, the public, and enforcement actors can effectively respond to the new challenges that technology presents.

D. The Promise and Limits of Human Trafficking Law

Against this backdrop, labor trafficking statutes can provide a powerful remedy for workers in the United States who experience human trafficking. They not only provide a mechanism for criminal charges but also allow workers to file lawsuits against perpetrators and entities that knowingly benefit from a joint venture.[309] These remedies provide a critical avenue to civil damages, including attorney's fees, with a statute of limitations that is longer than most state and federal employment statutes. Unlike other labor and contract remedies, the forced labor statute does not require the presence of an employee relationship and, thus, independent contractors, temporary workers, and other workers, can file complaints.[310] Additionally, civil forced labor claims have been effective in generating attention from federal prosecutors and resulting in related criminal charges. Thus, labor trafficking statutes can provide workers with a critical means for compensation and public acknowledgement of the harms from digital servitude. These efforts can also contribute to public understandings of labor trafficking and raise awareness about the industries where these practices are found.

Nevertheless, there remain several significant barriers to accountability for technology-facilitated labor trafficking. First, as companies outsource work beyond the borders of the United States, forced labor statutes may have limited reach. Researchers have shown how technology companies have often moved work overseas to benefit from lower wages and the less burdensome regulatory requirements. These concerns are particularly acute with the rise of Large Language Models and AI as technology companies rely on contractors abroad for microtasks like labeling images.[311] Also, new research shows that as the

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[308] Kate Klonick, *A New Taxonomy for Online Harms*, 95 B.U. L. REV. ANNEX 53, 54 (2015), https://www.bu.edu/bulawreview/bulronline/klonick-a-new-taxonomy-for-online-harms/ [https://perma.cc/9GTB-HQL7].

[309] *See* 18 U.S.C. § 1595(a).

[310] *See id.* § 1589.

[311] *See, e.g.*, GRAY & SURI, *supra* note 154, at 67; Kevin Sullivan, *The Potential Human Trafficking Risks Associated with a Booming Tech Industry*, VERISK (Mar. 7, 2024), https://core.verisk.com/Insights/Emerging-Issues/Articles/2024/March/Week-2/Potential-Human-Trafficking-Risks-in-the-

COVID-19 pandemic popularized remote work, many technology companies chose to move jobs abroad.[312] These challenges highlight the urgent need for accountability mechanisms to address potential forced labor abroad by US companies.

Although Congress authorized the potential extraterritorial application of federal trafficking statutes, courts have been slow to recognize these claims.[313] In 2003, Congress through the Trafficking Victims Protection Reauthorization Act, made the trafficking law apply extraterritorially only to sex trafficking of children "within the special maritime and territorial jurisdiction of the United States."[314] Then, in 2005, Congress established a crime for anyone "employed by or accompanying the Federal Government outside the United States" to commit criminal offenses, including sex trafficking of minors.[315] Eventually, in the TVPRA of 2008, Congress granted the courts of the United States extra-territorial jurisdiction over trafficking violations, including forced labor and involuntary servitude.[316] Despite optimism by legal scholars, questions remain about the scope and interpretation of this provision, with some arguing that the provision only applies to criminal trafficking violations, not civil trafficking liability.[317]

Tech-Industry [https://perma.cc/7HHL-JXGE] (explaining the risk of "digital sweatshops" as technology companies rush to create "digital supply chains to label and annotate data").

[312] Morgan Smith, *Remote Jobs Are Moving Overseas and to Smaller U.S. Cities: 'The Same Skills for 60% of the Cost*,' CNBC (June 9, 2023), https://www.cnbc.com/2023/06/09/remote-jobs-are-moving-overseas-and-to-smaller-us-cities.html [https://perma.cc/T942-UHCU] (showing that from 2020 to 2023, the number of North American companies with remote workers in Central America and the Caribbean increased by 300%).

[313] 18 U.S.C. § 1596; *see, e.g.*, Ratha v. Phatthana Seafood Co., 35 F.4th 1159, 1164 (9th Cir. 2022) (granting summary judgment because there was an insufficient relationship between Phatthana Seafood Co. Ltd and S.S. Frozen Food Co. Ltd., which engaged in forced labor conduct abroad).

[314] TVPRA of 2003, § 5(a)(2).

[315] Trafficking Victims Protection Reauthorization Act of 2005, Pub. L. No. 109-164, § 103(a)(1), 119 Stat. 3558.

[316] Trafficking Victims Protection Reauthorization Act of 2008, Pub. L. No. 110-457, § 223(a), 122 Stat. 5044.

[317] Lindsey Roberson & Johanna Lee, *The Road to Recovery After* Nestlé*: Exploring the TVPA as a Promising Tool for Corporate Accountability*, 6 COLUM. HUM. RTS. L. REV. ONLINE 1, 4 (2021), https://hrlr.law.columbia.edu/hrlr-online/the-road-to-recovery-after-nestle-exploring-tvpa-as-a-promising-tool-for-corporate-accountability/ [https://perma.cc/AB5F-AUMU] (calling the TVPA a "promising, yet underutilized, statute in the realm of foreign forced labor cases"); Sara Sun Beale, *The Trafficking Victim Protection Act: The Best Hope for International Human Rights Litigation in the U.S. Courts?*, 50 CASE W. RSRV. J. INT'L L. 17, 17 (2018) ("[F]or a narrow but important class of human rights violations—those involving forced labor, sex and forced labor trafficking, and knowingly benefitting from any of these offenses—the TVPA offers a firm footing for both civil and criminal cases."); Charity Ryerson, Dean Pinkert & Avery Kelly, *Seeking Justice: The State of Transnational Corporate Accountability*, 132 YALE L.J.F. 787, 806 (2022) (footnote omitted) ("[T]he Trafficking Victims Protection Reauthorization Act (TVPRA) is currently the most promising avenue in the United States for imposing civil liability on corporations for forced labor and human trafficking.").

In 2024, in *Doe v. Apple*, plaintiffs tested the extraterritorial scope of the TVPRA, arguing that Apple, Dell Technologies, Microsoft, and Tesla should be held liable civilly for forced labor of child miners in the Democratic Republic of the Congo.[318] In 2024, the D.C. District Court found that Apple, Dell Technologies, Microsoft, and Tesla were not liable.[319] Although the Circuit Court refused to rule on the question of extraterritoriality, it affirmed the district court's dismissal for failure to allege a "venture" between the technology companies and traffickers abroad, articulating a high standard of causation difficult for many plaintiffs to meet.[320] Thus, as technology companies move work abroad, it may to be difficult to expose them to civil liability, especially if there is no shared enterprise between the companies and supplies that facilitate forced labor.[321]

Second, forced labor content online raises new questions about whether and to what extent online platforms should face legal accountability for such content. Section 230 of the Communications Decency Act prevents individuals from bringing civil suits against technology companies for content posted by third parties.[322] Congress created an exception to Section 230 for online sex trafficking content in FOSTA, but no similar exception exists for forced labor content.[323] Therefore, technology companies remain largely immune from civil liability for forced labor content posted online by third parties. Companies are not immune from criminal liability if they, knowingly or in a reckless manner, benefit financially from participation in a forced labor venture.[324] However, federal prosecutions for forced labor content remain rare due in part to the high *mens rea* requirement. As evidence of forced labor content online mounts,

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[318] Doe 1 v. Apple, Inc., No. 1:19-cv-03737, 2021 WL 5774224 (D.D.C. Nov. 2, 2021), *aff'd*, 96 F.4th 403 (D.C. Cir. 2024).

[319] *Id.* at *18.

[320] Doe 1 v. Apple, Inc., 96 F.4th 403, 414 n.4 (D.C. Cir. 2024) ("Because we affirm on this ground, we do not address the district court's alternative holdings—which the Tech Companies defend on appeal—(1) that the plaintiffs failed to adequately plead forced labor or labor trafficking under sections 1589 and 1590, and (2) that the TVPRA does not apply extraterritorially."). Indeed, the court interpreted the meaning of "venture" to require a causal connection, defined as "(1) a wrongful act that causes an injury, specifically forced labor; (2) knowledge, as the defendant must knowingly benefit; and (3) substantial assistance, namely participation in the 'venture.'" *Id.* at 411.

[321] The U.S. Court of Appeals for the D.C. Circuit in *Apple* affirmed the district court's finding that they did not sufficiently plead that there was a venture because "[t]he plaintiffs have not adequately alleged the Tech Companies participated in a venture because there is no shared enterprise between the companies and the suppliers who facilitate forced labor." *Id.* at 415. *But see* Memorandum Opinion and Order at 26, F.C. v. Jacobs Sols. Inc., No. 1:23-cv-02660 (D. Colo. June 26, 2025) (reasoning that courts may find extraterritorial jurisdiction involving federal human trafficking violations when there is a venture and "the persons or entities in the venture that committed direct violations of sections 1589 or 1590 fit in one of the three categories tying them to the United States").

[322] *See* 47 U.S.C. § 230 (2018).

[323] *See* FOSTA, 132 Stat. 1253.

[324] *See* 18 U.S.C. § 1589(b).

there may be cases where prosecution is warranted, especially if companies have brazen knowledge and knowingly benefit from forced labor. Until then, there will remain few avenues for legal accountability, absent legislative change to amend Section 230.

Nevertheless, corporate pressure and public scrutiny can still play a role in encouraging technology companies to engage in content moderation and affirmatively develop policies and tools to address forced labor content online.[325] Technology companies have come under scrutiny for forced labor content online. In 2019, BBC Arabic broke investigative reporting that showed Facebook and Instagram hosted forced labor content online that promoted domestic servitude in the Middle East.[326] Subsequently, an internal report from Facebook showed that the company had known about perpetrators of labor trafficking using its platform since 2018 and that "gaps still exist in our detection of on-platform entities engaged in domestic servitude."[327] After a public outcry,[328] Apple threatened to remove Facebook and Instagram from its App Store if Meta failed to take further action to combat labor trafficking online.[329] Additionally, Meta's shareholders filed a lawsuit alleging federal securities violations for failure to disclose and advise shareholders about human trafficking content on their platforms.[330] Thereafter, Facebook promised to proactively address the content, disabling more than 1,000 accounts and removing over 300,000 potential violations.[331] Afterward, Meta developed new technology tools to identify forced labor content and updated its human trafficking policy to address forced labor content.[332] These measures show

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[325] *See* Duffy, *supra* note 12 (reporting on forced labor content on Instagram and Facebook's incomplete efforts to prohibit content related to domestic servitude); Hannah Gelbart, Mamdouh Akbiek, & Ziad Al-Quattan, *TikTok Profits from Livestreams of Families Begging*, BBC (Oct. 11, 2022), https://www.bbc.co.uk/news/world-63213567 [https://perma.cc/K6S2-7BP7] (exploring how TikTok profited financially from "exploitative begging" in Syrian refugee camps).

[326] Pinnell & Kelly, *supra* note 12; *see also Maids for Sale: How Silicon Valley Enables Online Slave Markets*, *supra* note 12. Commodity apps, like "4Sale" and "Haraj," available for download in the Apple and Google app stores, allowed employers to purchase domestic workers for a few thousand dollars. Pinnell & Kelly, *supra* note 12. Employers also used Instagram to facilitate the sale of domestic workers, some of whom experienced domestic servitude. *Id.*

[327] Duffy, *supra* note 12.

[328] *See id.* (reporting on a BBC investigation into an "illegal online marketplace for domestic workers" which used Instagram for its operations).

[329] *Id.*

[330] *See* Complaint for Violations of the Federal Securities Laws at 12, Ohio Pub. Emps. Ret. Sys. v. Meta Platforms, Inc., No. 3:21-cv-08812 (N.D. Cal. Nov 12, 2021) (alleging federal securities violations resulting from Meta's failure to advise and efforts to misrepresent to shareholders and the public about human trafficking and other conduct on its platforms); Duffy, *supra* note 12 (describing pressure from Apple on Meta to address forced labor content discovered online).

[331] Owen Pinnell, *Apple Threatened Facebook Ban Over Slavery Posts on Instagram*, BBC NEWS ARABIC (Sep. 23, 2021), https://www.bbc.com/news/technology-58645547 [https://perma.cc/5SLL-M6VQ].

[332] Pinnell, *supra* note 331.

that public awareness and shareholder efforts can be a tool, however imperfect, to promote greater corporate accountability.

Although efforts to address online sex trafficking have progressed over a decade, understandings of digital servitude are still in their infancy. More research is needed to comprehend digital servitude and the impact of technology on labor trafficking survivors. Law enforcement and prosecutors require training to recognize and investigate technology-facilitated coercive control. New tools are important to identify and disrupt digital servitude. Additionally, courts must continue to adapt their understanding of the harm caused by technology-facilitated coercion and related tactics. Only by acknowledging modern servitude can courts, policy makers, advocates, and the general public begin to address the modern realities of forced work.

CONCLUSION

This Article provides a descriptive account of how technology intersects with modern claims of forced labor in the United States. It shows how perpetrators of forced labor can use technology to recruit workers through social media and online job recruitment sites. It also applies the concept of technology-facilitated coercive control to understand how perpetrators marshal technology to surveil, harass, stalk, and threaten workers. It demonstrates how, as the nature of work changes, our understanding of forced work must evolve with it. It calls on scholars to engage in greater empirical and legal research to understand the role of technology in forced labor cases and to develop tools to combat it.

This Article examines how human trafficking law can address the modern realities of forced labor. It argues that online recruitment presents new opportunities to identify and disrupt labor trafficking. The Article encourages courts to interpret the concepts of coercion and serious harm in ways that account for technology-facilitated coercion and calls for increased awareness among advocates, law enforcement, and workers about the harms of digital servitude. To effectively combat technology-facilitated trafficking, it is imperative that we continually adapt our understanding of modern trafficking dynamics, including expanding research on how technology enables forced labor.

APPENDIX A: RESEARCH METHODOLOGY

The research team (hereinafter "team")[333] gathered all criminal complaints, criminal indictments, civil complaints, and related federal pleadings in federal forced labor or involuntary servitude cases from 2000 to 2023. To do so, the team first searched for federal civil cases filed in U.S. district courts, circuit courts, and the Supreme Court by searching through LexisNexis for cases that included references to 18 U.S.C. § 1589, 18 U.S.C. § 1590, and 18 U.S.C. § 1584. The team also obtained a comprehensive list of 460 civil federal cases involving civil labor trafficking claims from the Human Trafficking Legal Center that included cases from 2003 to 2023. The team then used this list to eliminate duplicates and gather the 460 civil complaints using a search process on Bloomberg Law.

The team also searched for federal criminal cases of labor trafficking filed in U.S. district courts, circuit courts, and the Supreme Court by searching through LexisNexis that included references to 18 U.S.C. § 1589, 18 U.S.C. § 1590, and 18 U.S.C. § 1584, which uncovered 111 criminal forced labor or involuntary servitude cases. Of these cases, 83 involved purely labor trafficking cases, 14 involved sex trafficking with little reference to forced labor, and 14 involved a mix of labor and sexual abuse or sex trafficking.

With the assistance of the Boston University School for Computing and Data Sciences, computer science students participating in the HUB XC 410 Spark! DataScience4Good Program conducted a basic text analysis on data from civil and criminal complaints. To extract text from the PDF files, they used code from the EasyOCR project and processed the documents on BU's Shared Computing Cluster. The final extracted data from the dockets was stored in a CSV file with columns for File Name, File Content, and relevant metadata, including the Docket Number and Date. The team conducted a search, ignoring case sensitivity, of the pleadings for 102 terms related to information and communication technology, including "internet," "online," "social media," "TikTok," "Google," "Facebook," and "ChatGPT," among other terms. The complete list of technology-related terms is available upon request from the author.

The team then eliminated 14 terms likely to cause false positives, such as "post," "indeed," "feed," "hack," or "follower." The results yielded 406 civil and criminal federal labor trafficking cases that included technology-related terms. The team then manually reviewed forty-nine of the 149 cases from 2018

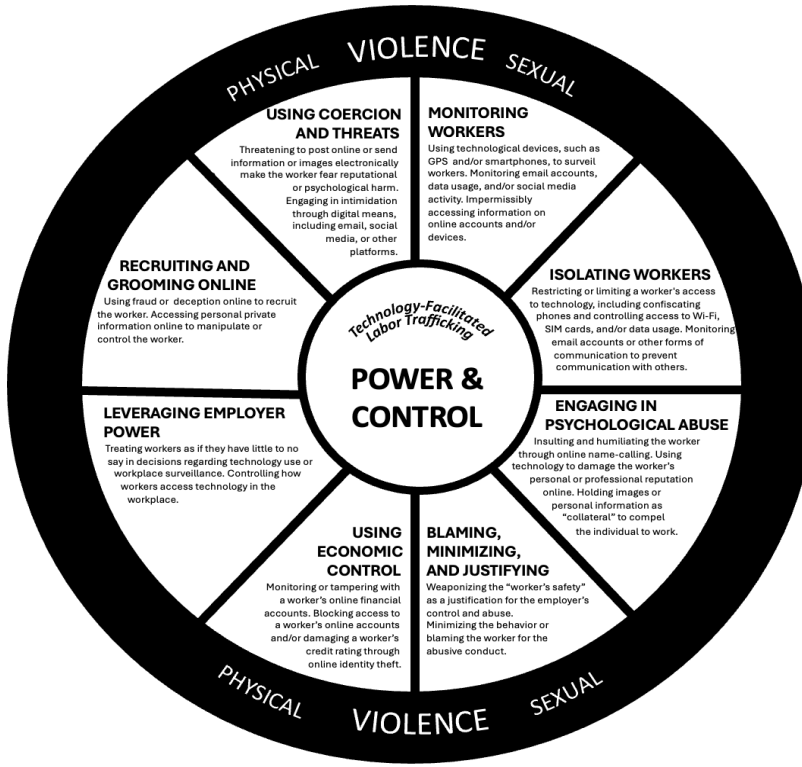
[333] The research team consisted of Jordan Boyle, Julie Dahlstrom, and students from the Boston University (BU) Center for Computing & Data Sciences (hereinafter "data science team"). The data science team included Aleeza Shah, David Lee, Shah Mir Ashfaq, and Yuqing Yang, and they were supervised by BU Professors Ethan Mascoop and Patrick McQuillan.

to 2023, which included technology-related terms, to create a self-selected sample of forty-seven cases. The team excluded two cases, one filed by *pro se* parties and one where the court dismissed the case at the summary judgment stage, to increase the reliability of the data. The resulting set of forty-seven cases includes thirty-nine purely labor trafficking cases and eight cases with allegations of labor trafficking as well as sexual abuse and/or sex trafficking. Six cases were criminal, and forty-one cases were civil. The team then coded the federal pleadings based on the appearance of technology-related terms and engaged in a content-based analysis to identify themes across cases.

It is important to note the limitations of our research methodology. Many civil and criminal cases do not end with a finding of guilt. As a result, the self-selected sample was not limited to cases that ended in a conviction or a finding of guilt. The cases include allegations rather than proven conduct, which could decrease the reliability of results. To bolster reliability, the team eliminated any cases where parties were unrepresented because attorneys have a duty of candor toward the tribunal and eliminated any cases where the district court dismissed the case for failure to state a claim under Federal Rule of Civil Procedure 12(b)(6).

APPENDIX B: TECHNOLOGY-FACILITATED LABOR TRAFFICKING POWER AND CONTROL WHEEL

This Wheel is largely based on identified tactics from civil and criminal pleadings in trafficking cases from the Article, *Digital Servitude*, by Julie Dahlstrom.[334] The below wheel is modeled after The Duluth Power and Control Wheel,[335] The National Network to End Domestic Violence Power and the Control Wheel,[336] and The Workplace Control Wheel Pertaining to Workplace Bullying.[337]



[334] Two tactics—(1) using economic control; and (2) blaming, minimizing, and justifying—are included above, although not directly referenced in the pleadings identified in the Article because they are common ways that perpetrators of gender-based violence engage in technology-facilitated coercive control.

[335] *See* PENCE & PAYMAR, *supra* note 169, at 3.

[336] NAT'L NETWORK TO END DOMESTIC VIOLENCE SAFETY NET PROJECT, *supra* note 183.

[337] Scott, *supra* note 169, at 445.